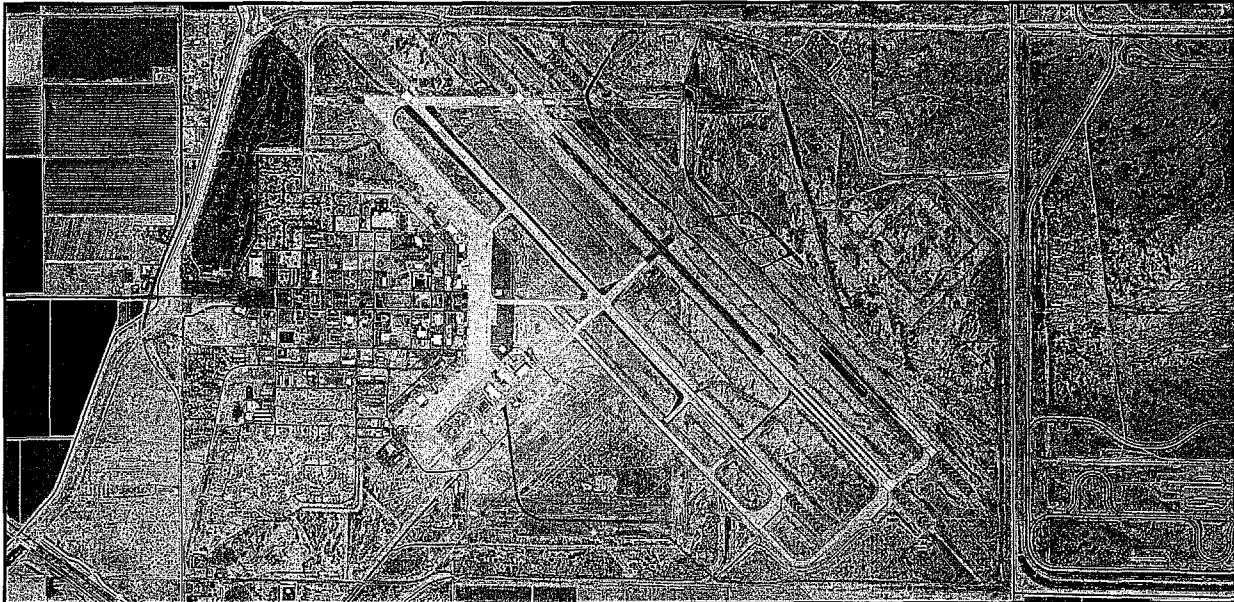




Chapter One INVENTORY

Chapter One

INVENTORY



The initial step in the preparation of the Airport Master Plan Update for Williams Gateway Airport is the collection and analysis of information pertaining to the airport and the area it serves. This chapter assembles collected information which will be used in subsequent analyses in this study.

AIRPORT SETTING

Williams Gateway Airport encompasses 3,019 acres of the former Williams Air Force Base. Located in the southeastern portion of the Phoenix Metropolitan Area, Williams Gateway Airport is within the jurisdictional boundaries of the City of Mesa, Maricopa County, Arizona. The airport is located approximately 35 miles east of the Phoenix central business district in an area commonly referred to as the Salt River Valley. Exhibit 1A depicts the

location of Williams Gateway Airport within the Phoenix Metropolitan Area and local vicinity.

HISTORICAL PERSPECTIVE

Williams Gateway Airport is a component of the reuse of the former Williams Air Force Base. Williams Air Force Base served as a pilot training base for more than 52 years. The site was first developed as an Army Air Corps Advanced Flying School in 1941 to train combat pilots for World War II. In February 1942, the facility was designated Williams Field in honor of an Arizona-born pilot. The facility was renamed Williams Air Force Base in 1948 and remained that until it was closed in 1993. From 1941 to 1993 more than 26,000 men and women earned their wings at the base.

Williams Air Force Base was recommended for closure in 1991 by the Base Closure and Realignment Commission (BRAC). In response to this action, the Williams Air Force Base Economic Reuse Advisory Board was established by the Governor in 1991 to develop a long range plan for the reuse of Williams Air Force Base. The resulting Economic Reuse Plan recommended that the former air base be redeveloped as an aerospace, educational, and training facility with the airport serving as a reliever for Phoenix Sky Harbor International Airport. According to the Maricopa Association of Governments *Regional Aviation System Plan*, at the time of its closure, Williams Air Force Base was conducting 550,000 operations annually.

Williams Air Force Base closed in September 1993 and Williams Gateway Airport opened in March 1994. After operating four years under a lease agreement, the Williams Gateway Airport Authority obtained ownership of the airport facilities by Quit Claim Deed on April 30, 1998.

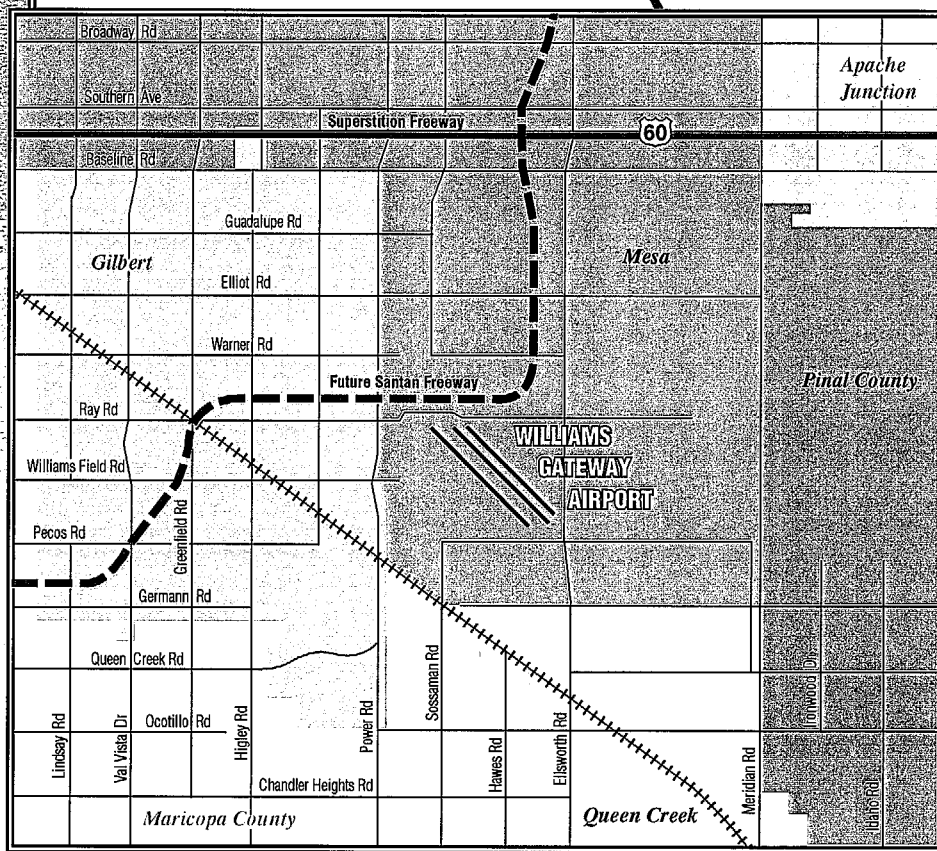
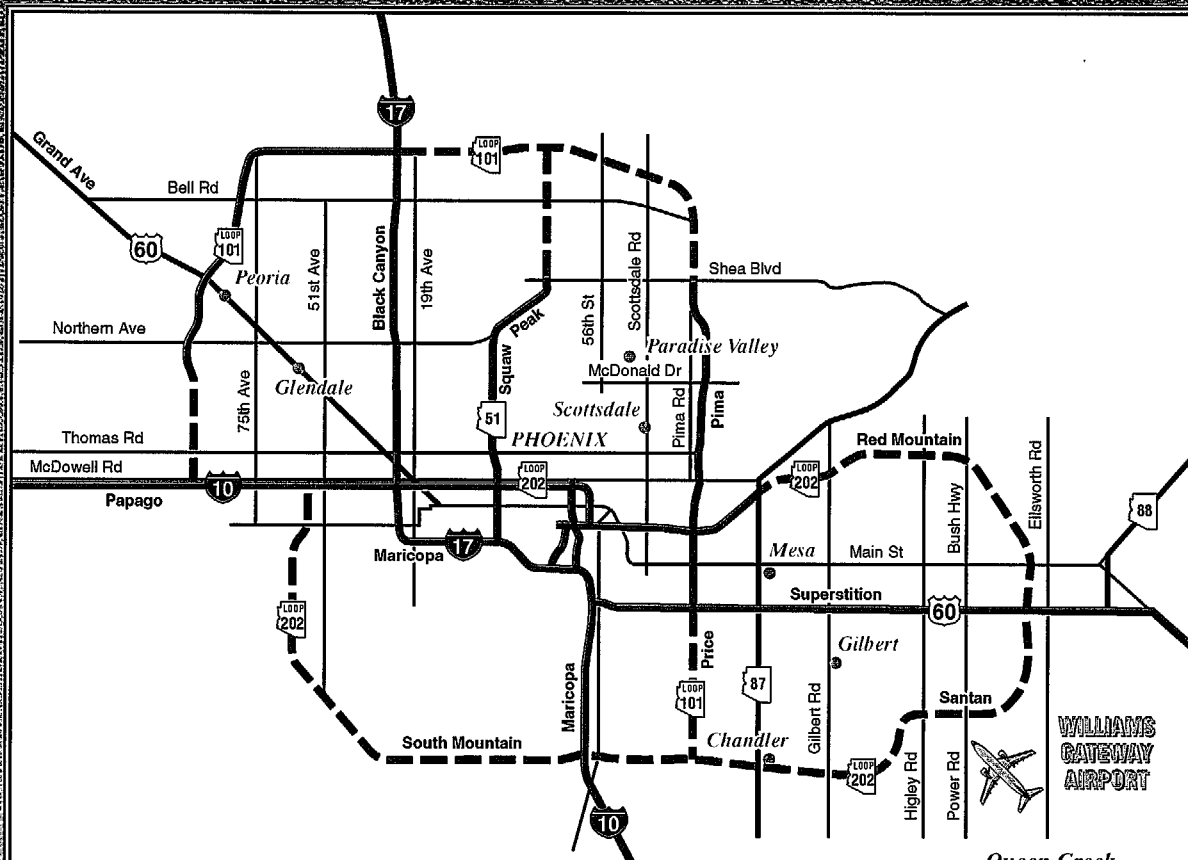
The Williams Educational, Research and Training (ERT) Campus encompasses approximately 734-acres of the former air base. The Arizona State University East Campus, Mesa Community College Campus, and Chandler-Gilbert Community College Campus are located on the Williams Campus. The Williams Campus is primarily owned and operated by Arizona State University East and the Maricopa Community College District. The U.S. Air Force Research Laboratory is also located on the Williams Campus.

AIRPORT ADMINISTRATION

Williams Gateway Airport is owned and operated by the Williams Gateway Airport Authority (WGAA). The Authority is comprised of the City of Mesa, Town of Gilbert, Town of Queen Creek, and the Gila River Indian Community. A four-member Board of Directors, consisting of a representative from each of these governing bodies, provides policy direction for the authority. An executive director and professional staff conduct the day-to-day activities of the Authority.

DEVELOPMENT AND FUNDING HISTORY

Since 1992, the WGAA has received approximately \$39.2 million in grants-in-aid for the redevelopment of the Williams Air Force Base facilities. This has included funding for planning studies, staff salaries and administrative expenses, and improvement projects. Table 1A summarizes these grants and associated projects since 1992. The WGAA has contributed approximately \$3.2 million in matching funds for these grants. Maricopa County has contributed \$500,000 towards Ray Road and Sossaman Road construction and \$60,000 for the Williams Area Transportation Study. The schools that make-up the Williams Campus have contributed \$96,725 towards the preparation of the Williams Campus Master Plan.



LEGEND

--- Planned Highway Development



NOT TO SCALE



TABLE 1A
WGAA Grant History (1992-1998)

Funding Source / Project	Year	Grant Amount
U.S. Department of Defense, Office of Economic Adjustment (OEA)		
Williams Reuse Plan, Administration	1992	\$200,000
Administrative Expenses	1993	560,606
Administrative Expenses	1994	411,659
Planning Studies ¹ , Administration	1995	388,868
Administrative Expenses	1996	222,686
Administrative Expenses	1997	<u>98,843</u>
Total		\$1,882,662
U.S. Department of Commerce, Economic Development Administration (EDA)		
Planning Studies ²	1994	\$587,500
Ray Road/Sossaman Road Design	1995	482,250
Business Park Improvements ³	1996	1,500,000
Phase I - Ray Road/Sossaman Road Construction	1997	4,000,000
Phase II - Ray Road/Sossaman Road Construction (Pending EDA approval)	1998	<u>1,000,000</u>
Total		\$7,569,750
Federal Aviation Administration (FAA)		
Runway 12L-30R Reconstruction	1996	\$5,700,000
Runway 12L-30R Reconstruction	1997	6,528,961
Runway 12L-30R Reconstruction	1998	3,499,000
Noise Compatibility Study	1999	<u>227,650</u>
Total		\$15,955,611
Arizona Department of Transportation - Aeronautics Division (ADOT)		
Fiscal Year 1995 (Pavement Maintenance)	1996	\$461,796
Fiscal Year 1996 (Pavement Maintenance)	1996	500,000
Fiscal Year 1997 (Pavement Maintenance)	1997	650,000
1997 FAA Grant Match (Runway 12L-30R Reconstruction)	1998	320,496
Fiscal Year 1998 (Pavement Maintenance)	1998	980,000
Terminal Improvements Design	1998	300,000
Grant Advance Fiscal Year 1999 (Pavement Maintenance)	1998	900,000
1998 FAA Grant Match (Runway 12L-30R Reconstruction)	1998	171,760
FY 2000, 2001 Grant Advance (Pavement Repair, Terminal Construction)	1998	1,800,000
1999 FAA Grant Match (Noise Compatibility Study)	1999	<u>11,175</u>
Total		\$6,175,227
State of Arizona, Department Of Commerce	1994-	
Marketing	1998	\$1,750,000 ⁴
State of Arizona	1996,	
Infrastructure Improvements (Sossaman Road Construction)	1998	\$5,880,000 ⁵
TOTAL ALL GRANTS		\$39,213,250
<p>Source: WGAA</p> <p>¹ Strategic Economic Development and Industrial/Commercial Master Plan, Williams Reuse Plan Update</p> <p>² Williams Regional Planning Study, Williams Area Transportation Plan</p> <p>³ Various improvements including, repainting hangars, roof repairs, air conditioning and cooler repairs, site preparation and utilities for vacant lots, security fencing, signage, ADA compliance, drainage improvements design, taxilane design, administrative expenses.</p> <p>⁴ \$350,000 annually</p> <p>⁵ \$1,880,000 - 1996, \$4,000,000 - 1998</p>		

THE AIRPORT'S SYSTEM ROLE

Airport planning exists on many levels: local, regional, state, and national. Each level has a different emphasis and purpose. This master plan will serve as the primary local airport planning document. Regionally, the airport is included in the Maricopa County Association of Governments (MAG) *Regional Aviation System Plan (RASP)*. The *RASP* evaluates the region's existing capacity and ability to meet existing and forecast aviation demand, expanding the focus beyond the individual airports, as provided for in their respective master plans. Williams Gateway Airport is one of 16 airports included in the *RASP* which MAG considers important to meeting the region's demand for aviation services.

At the state level, the airport is included in the *Arizona State Aviation System Plan (SASP)*. The purpose of the *SASP* is to ensure that the State has an adequate and efficient system of airports to serve its aviation needs well into the 21st century. The *SASP* defines the specific role of each airport in the State's aviation system and establishes funding needs. Through the State's Continuous Aviation System Planning Process (CASPP), the *SASP* is updated every five years. The most recent update to the *SASP* is the 1995 *Arizona State Aviation Needs Study (SANS)*. The purpose of the *SANS* is to provide policy guidelines that promote and maintain a safe aviation system in the State, assess the State's airport capital improvement needs, and identify resources and strategies to implement the plan. The 1995 *SANS* included all public and private airports and

heliports in Arizona which are open to the public, including American Indian and recreational airports.

At the national level, the airport is included in the *National Plan of Integrated Airport Systems (NPIAS)*. The *NPIAS* includes a total of 3,660 airports (both existing and proposed) which are important to national air transportation. The *NPIAS* includes estimates on the total development needs of the nation's airports which are eligible for federal funding assistance. Williams Gateway Airport is one of eight reliever airports in Arizona included in the *NPIAS*. As a reliever airport, Williams Gateway Airport is expected to relieve congestion at Phoenix-Sky Harbor by providing an alternate landing area for both general aviation and commercial aircraft. Williams Gateway Airport is one of six airports in the Phoenix Metropolitan Area designated as a reliever for Phoenix-Sky Harbor International Airport. However, each of the other airports are designated general aviation reliever airports.

PREVIOUS MASTER PLAN

The previous Airport Master Plan for Williams Gateway Airport was completed in 1993 and outlined the direction for the development of the facilities to accommodate a wide range of commercial passenger service, air cargo, general aviation, and industrial and commercial activities at the former Air Force Base. The Master Plan provided the following long term recommendations for the reuse of the former military facilities:

- Design airfield elements to Federal Aviation Administration (FAA) airport reference code D-V. Designing to these standards safely accommodates all sizes of commercial, military, and general aviation aircraft.
- Maintain Runway 12R-30L (west runway) to serve as the primary general aviation runway.
- Reconstruct Runway 12L-30R (east runway) to serve as the primary runway accommodating commercial air service and air cargo aircraft.
- Extend Runway 12L-30R 500 feet to the southeast and 2,650 feet to the northwest for a total length of 12,500 feet.
- Construct a parallel taxiway along the north side of Runway 12L-30R to accommodate long term passenger and air cargo facility development.
- Relocate the Instrument Landing System (ILS) from Runway 30C to Runway 30R.
- Close Runway 12C-30C and redevelop as a parallel taxiway serving both Runway 12L-30R and Runway 12R-30L.
- Redevelop the existing apron and areas south of Runway 12R-30L to accommodate general aviation and aviation-related industrial/commercial development.

- Develop long term commercial passenger and air cargo facilities east of Runway 12L-30R.

AIRPORT ACTIVITY

The following provides a historical summary of air cargo activity, number of based aircraft, and aircraft operations at Williams Gateway Airport. This information will be used in subsequent analyses in this Master Plan Update to project future aeronautical activity and determine future facility needs.

AIR CARGO

At the present time, air cargo service at Williams Gateway Airport consists of unscheduled charter flights. **Table 1B** and **Exhibit 1B** summarize historical enplaned (outbound) and deplaned (inbound) cargo at Williams Gateway Airport for the period 1995 to 1998. As evidenced in the table, monthly and annual air cargo levels have fluctuated greatly over this period from a high of 9,793,258 pounds (4,896 tons) of enplaned and deplaned cargo in 1995 to a low of 142,891 pounds (71 tons) in 1998. The drop in enplaned cargo between 1995 and 1996 can be attributed to a local business shipping a large number of goods for a short period in 1995. Monthly air cargo totals are summarized in a table at the end of this chapter.

TABLE 1B
Historical Air Cargo Summary (1995-1998)

Year	Enplaned (Outbound)	Deplaned (Inbound)	Total
1995	9,083,467	709,791	9,793,258
1996	341,000	5,200	346,200
1997	456,853	19,217	476,070
1998	142,074	817	142,891

Source: WGAA

Note: All totals in pounds.

BASED AIRCRAFT

Table 1C and Exhibit 1B summarize based aircraft by type for the airport from 1994 to June, 1998. With the exception of 1997, based aircraft have

grown annually since the airport opened to the public in 1994. As illustrated in Table 1C, single-engine piston aircraft comprise the majority of based aircraft, accounting for approximately 60 percent of total based aircraft.

TABLE 1C
Historical Based Aircraft By Type

Year	Single-Engine	Multi-Engine	Turboprop	Jet	Rotor	Total
1994 ¹	2	2	0	1	0	5
1995	11	10	1	1	0	23
1996	33	2	2	4	1	42
1997	28	5	4	1	3	41
1998	32	5	11	1	5	54

Source: Williams Gateway Airport Authority

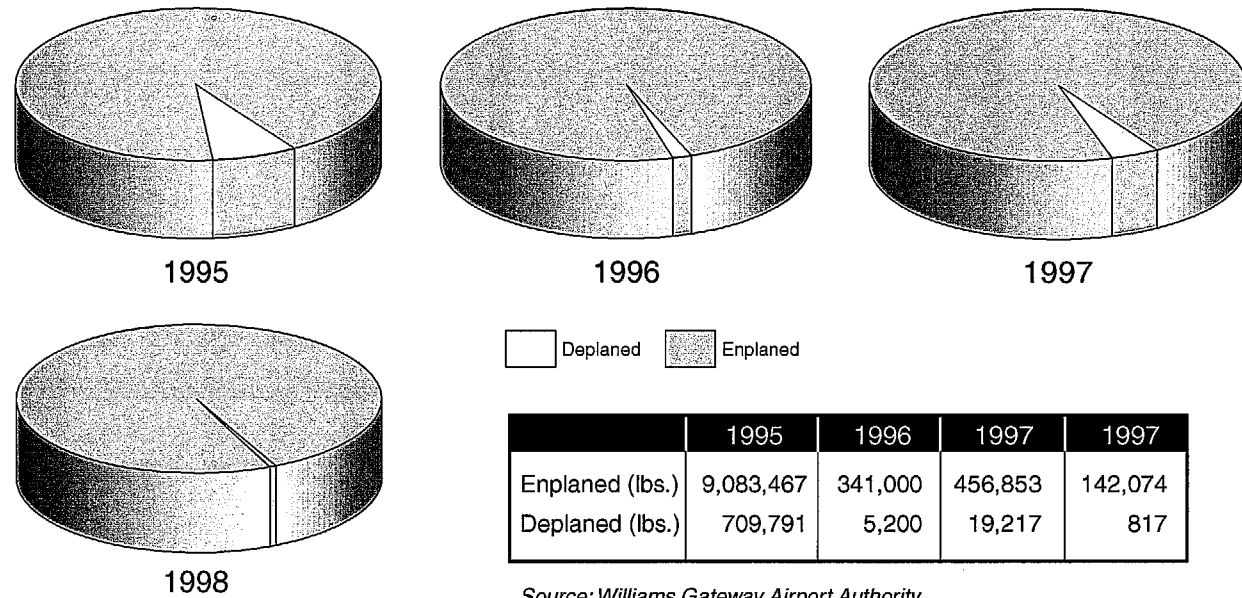
¹ March through December

AIRCRAFT OPERATIONS

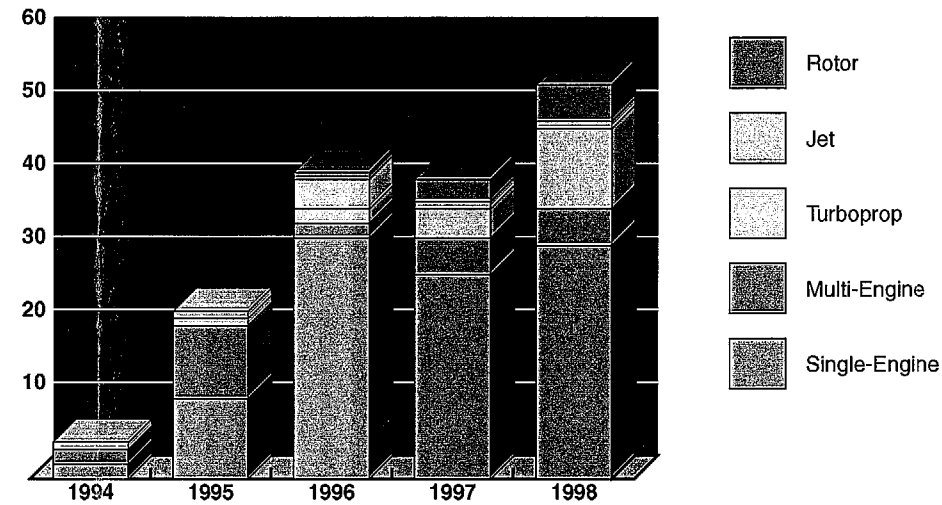
Table 1D and Exhibit 1B provide a summary of aircraft operations (takeoffs and landings) for the period 1994 to 1998. Aircraft operations are reported in four general categories: air carrier (which includes nearly all large transport-type aircraft operations), air taxi (which includes scheduled and non-

scheduled air carriers, charter operations, and cargo carriers), general aviation, and military. As shown in the table, general aviation operations account for the majority (83 percent) of total annual operations.

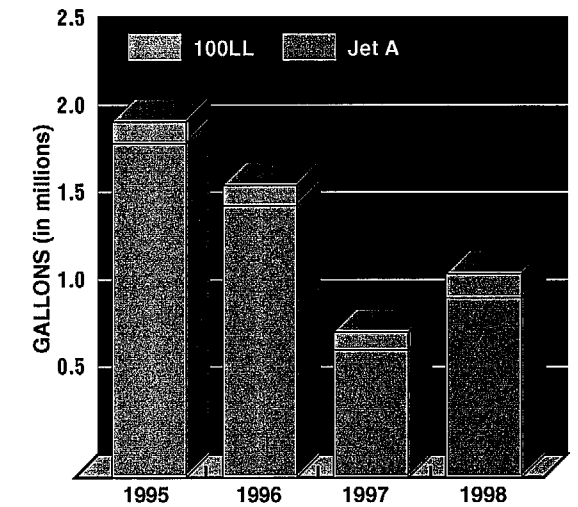
Aircraft operations are further classified as local or itinerant. Local operations consist mostly of aircraft

ENPLANED VS. DEPLANED CARGO

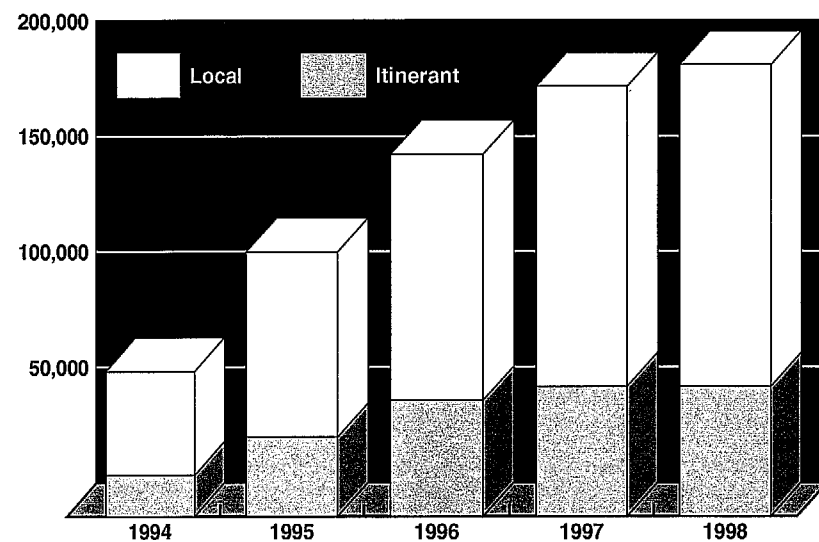
Source: Williams Gateway Airport Authority

BASED AIRCRAFT BY TYPE

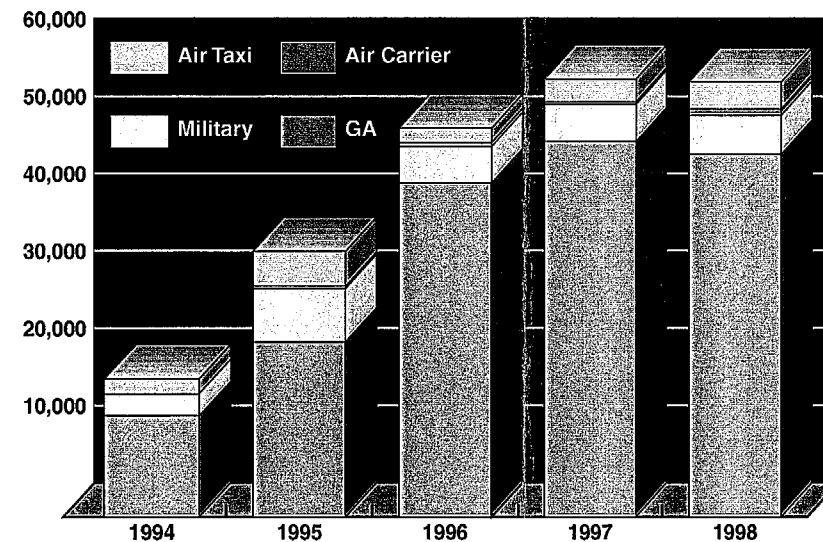
Source: Williams Gateway Airport Authority

FUEL SALES BY TYPE

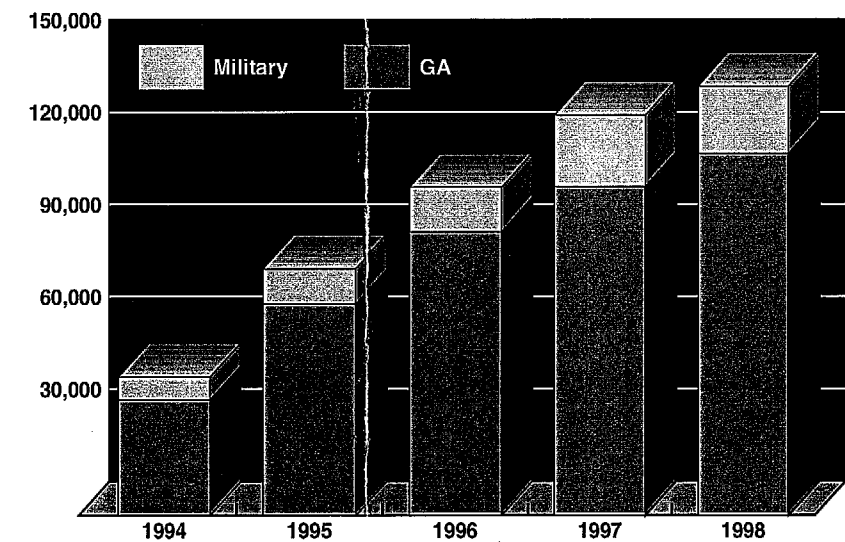
Source: Williams Gateway Airport Authority

TOTAL ANNUAL OPERATIONS

ANNUAL OPERATIONS			
Year	Itinerant	Local	Total
1994	17,873	45,015	62,888
1995	34,361	80,231	114,592
1996	50,319	106,642	156,961
1997	56,345	130,064	186,409
1998	56,268	139,534	195,802

ITINERANT OPERATIONS BY TYPE

ITINERANT OPERATIONS					
Year	GA	Military	Air Carrier	Air Taxi	Total
1994	13,078	2,865	0	1,930	17,873
1995	22,675	6,877	296	4,513	34,361
1996	43,217	4,733	552	1,817	50,319
1997	48,560	4,774	106	2,905	56,345
1998	46,891	5,069	817	3,491	56,268

LOCAL OPERATIONS BY TYPE

LOCAL OPERATIONS			
Year	GA	Military	Total
1994	37,477	7,538	45,015
1995	68,698	11,533	80,231
1996	92,140	14,502	106,642
1997	106,848	23,216	130,064
1998	117,682	21,852	139,534

Source: Williams Gateway Airport Authority



training operations conducted within the aircraft traffic pattern and touch-and-go operations. Itinerant operations are originating or departing aircraft which are not conducting operations within the airport traffic pattern. Local operations comprise the majority of all

operations at the airport, reflecting the large level of training activity conducted at the airport.

Monthly operational detail for the airport from 1994 to 1998 is summarized at the end of this chapter.

TABLE 1D
Aircraft Operations Summary (1994-1998)

Year	Air Carrier	Air Taxi	General Aviation		Military		Totals
			Itinerant	Local	Itinerant	Local	
1994 ¹	0	1,930	13,078	37,477	2,865	7,538	62,888
1995	296	4,513	22,675	68,698	6,877	11,533	80,231
1996	552	1,817	43,217	92,140	4,733	14,502	156,961
1997	106	2,905	48,560	106,848	4,774	23,216	186,409
1998	817	3,491	46,891	117,682	5,069	21,852	195,802

Source: Williams Gateway Airport Authority

¹ March through December

FUEL SALES

Table 1E summarizes fuel sales for the WGAA from 1995 to 1998. During this period, the WGAA has been the sole fuel

provider on the airport. As shown in the table, fuel sales have fluctuated annually, with Jet-A comprising the majority of fuel sales.

TABLE 1E
Fuel Sales (1995-1998)

Year	100LL	Jet-A	Total
1995	125,408	1,912,765	2,038,173
1996	118,163	1,556,447	1,674,610
1997	103,420	731,834	835,254
1998	138,366	1,028,952	1,167,318

AIRPORT FACILITIES

Airport facilities can be functionally classified into two broad categories: airside and landside. The airside category includes facilities directly

associated with aircraft operations. The landside category includes facilities necessary to provide the transition from surface to air transportation and support facilities necessary for the safe operation of the airport.

AIRSIDE FACILITIES

Airside facilities include runways, taxiways, navigational aids, and airport lighting. A depiction of airside facilities at the airport is provided on **Exhibit 1C**.

Runways

The existing airfield configuration at Williams Gateway Airport includes three parallel runways generally aligned in a northwest-southeast orientation and designated as Runway 12L-30R, 12C-30C, and 12R-30L. Runway 12L-30R is 9,301 feet long and 150 feet wide. This runway was reconstructed. A 15-inch concrete overlay was added to the existing runway surface. This runway is intended to serve as the primary heavy aircraft runway. Runway 12C-30C is 10,201 feet long, 150 feet wide, and serves as the primary instrument runway. The first 1,000 feet of 12C and 3,500 feet of Runway 30C are constructed of concrete. The remaining portions of the runway are constructed of asphalt. Runway 12C-30C was rehabilitated in 1997. Runway 12R-30L is 10,401 feet long by 150 feet wide and serves as the primary training runway. There are 1,000-foot paved overruns available at each runway end.

Table 1F summarizes runway information for Williams Gateway Airport. Runway pavement strengths are expressed in terms of aircraft landing gear configurations. Single wheel (SW) refers to the design of certain aircraft landing gear which has a single wheel on each main landing

gear strut. Dual wheel (DW) refers to the design of certain aircraft landing gear which have two wheels on each main landing gear strut. Dual Tandem Wheel (DTW) refers to aircraft landing gear struts with a tandem set of dual wheels (four wheels) on each main landing gear strut. Double Dual Tandem Wheel (DDTW) refers to the aircraft landing gear with dual sets of dual tandem wheels (eight wheels on each strut).

Taxiway A provides primary access between the runways and apron area and includes two partial parallel taxiway segments. The northwest portion of Taxiway A extends along the outer edge of the north apron between Taxiway H and Taxiway G. This portion of Taxiway A is located 630 feet from the Runway 12R-30L centerline. The southeast portion of Taxiway A extends from Taxiway V to Taxiway P, is 75 feet wide and located 800 feet from the Runway 12R-30L centerline.

The remaining taxiways connect the runways with the apron and Taxiway A. Taxiway G connects the northwest end of each runway (Runway 12) with Taxiway A and is 150 feet wide. Taxiway H is 100 feet wide and extends between Runway 12R-30L and the north apron. Taxiway K extends between Runway 12C-30C and facilities located south of the south apron area and is 150 feet wide. Taxiway L extends between Runway 12R-30L and Taxiway A and is 75 feet wide. Taxiway N connects Taxiway A and the Runway 30L end and is 75 feet wide. Taxiway P extends between Taxiway A and the Runway 30C, and 30R ends.

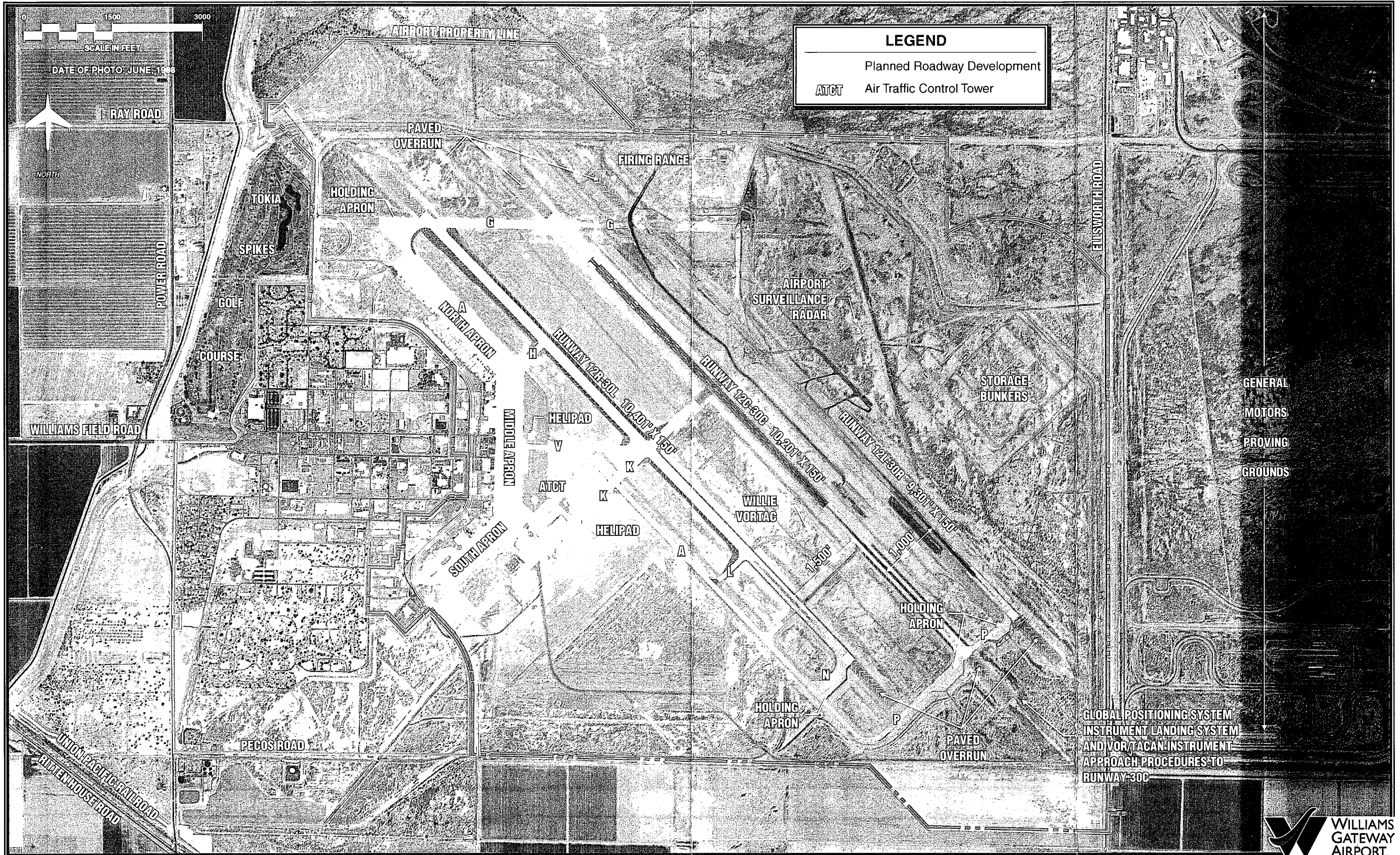


TABLE 1F**Runway Information**

	Runway 12L-30R ¹	Runway 12C-30C	Runway 12R-30L
Runway Length (feet)	9,301	10,201	10,401
Runway Width (feet)	150	150	150
Runway Surface Material (Condition)	Concrete (Good)	Concrete/asphalt ² (Good)	Concrete (Good)
Runway Load Bearing Strength (pounds)			
SW	75,000	55,000	55,000
DW	180,000	95,000	95,000
DTW	350,000	185,000	185,000
DDTW	850,000 (B747)	550,000	550,000
Lighting			
Runway Pavement Edge (Condition)	High Intensity (New)	Medium Intensity (New)	Medium Intensity (New)
Approach (Condition)	PAPI (12L-30R) (N/A)	PAPI (12C, 30C) Fair	None (N/A)
Runway Markings (Condition)	Precision (Good)	Precision (Good)	Precision (Good)
Instrument Approach Procedures	None	ILS Runway 30C GPS Runway 30C VOR or TACAN Runway 30C	None
Traffic Pattern	Left 12L Right 30R	Left 12C Left 30C	Right 12R Left 30L

Source: Airport Facility Directory, Southwest U.S., August 13, 1998; U.S. Terminal Procedures, Southwest Volume 2, August 13, 1998; Williams Gateway Airport Authority

¹ Presently closed for reconstruction. 15 inch concrete overlay.

² Runway 12C first 1,000 feet concrete; Runway 30C first 3,500 feet concrete, remaining portions asphalt.

SW - Single Wheel Aircraft

DW - Dual Wheel Aircraft

DTW - Dual Tandem Wheel Aircraft

DDTW - Double-Dual Tandem Wheel Aircraft

VOR - Very High Frequency Omnidirectional Range

VASI - Visual Approach Slope Indicator

ILS - Instrument Landing System

GPS - Global Positioning System

TACAN - Tactical Air Navigation Aid

Taxiway P is 75 feet wide. Taxiway V provides primary access from the apron to the Runway 30 ends. Taxiway V is 100 feet wide and extends between Runway 12R-30L and the middle apron.

Taxiways K and A intersect with Taxiway V.

Holding aprons are available at the Runway 30L, 30C, 30R, and 12R ends.

Holding aprons provide an area for aircraft to prepare for departure off the taxiway and allow aircraft to bypass which are ready for departure.

Airfield Lighting

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the airport for this purpose. These lighting systems, categorized by function, are summarized as follows:

Identification Lighting: The location of an airport at night is universally indicated by a rotating beacon. A rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon is currently located on the water tower west of the airfield. A current project will relocate the rotating beacon to the top of the airport traffic control tower.

Runway and Taxiway Lighting: Runway and taxiway lighting utilizes light fixtures placed near the pavement edge to define the lateral limits of the pavement. This lighting is essential for maintaining safe operations at night and/or during times of poor visibility in order to maintain safe and efficient access from the runway and aircraft parking areas. Medium intensity pavement edge lighting is provided along Runways 12R-30L and 12C-30C. The Runway 12C-30C lighting was recently replaced by the WGAA and included new cabling, transformers, and light fixtures. The Runway 12R-30L lighting was replaced in 1997. High intensity pavement edge lighting was

installed on Runway 12L-30R and connecting taxiways during the reconstruction project. Runway threshold lighting identifies each runway end. Medium intensity taxiway pavement edge lighting is available at Williams Gateway Airport.

Runway identification signage was installed in 1998. Runway identification signage assists pilots in locating their position on the airfield and directing them to their desired location.

Visual Approach Lighting: A precision approach path indicator (PAPI) is available at the Runway 12C, 12L, 30R, and 30C ends. The PAPI consists of a system of lights located near the runway threshold. When interpreted by the pilot they give him or her an indication of being above, below, or on the designed descent path to the runway.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces. The precision markings on each runway identify the runway centerline, designation, touchdown point, threshold, aircraft holding positions, and pavement edge. Taxiway and apron taxilane centerline markings assist aircraft using these airport surfaces.

Navigational Aids

Navigational aids (NAVAIDS) are electronic devices that transmit radio

frequencies which properly equipped aircraft and pilots translate into guidance and position information. Navigational aids, located on or near the airport, can be functionally classified as either enroute or terminal area navigational aids. In general, enroute navigational aids provide point-to-point navigation, while terminal navigational aids provide approach and landing guidance. Some NAVAIDS serve as both enroute and terminal navigational aids.

Enroute Navigational Aids: The types of electronic navigational aids available for aircraft enroute to the airport include the Very High Frequency Omnidirectional Range (VOR) facility, nondirectional beacon (NDB), LORAN-C, and the Global Positioning System (GPS).

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility to provide distance as well as direction information to the pilot. Military tactical air navigation aids (TACAN's) and civil VOR's are commonly combined to form a VORTAC.

A VORTAC provides distance and direction information to civil and military pilots. The Phoenix, Stanfield, Gila Bend, and Buckeye VORTACs can be utilized by pilots flying to or from the Phoenix area. The Willie VORTAC, located on the airport, can be used for navigation to or from Williams Gateway Airport by pilots within approximately 40 miles of the airport.

The NDB transmits nondirectional radio signals whereby the pilot of properly equipped aircraft can determine the bearing to or from the NDB facility and then "home" or track to or from the station. Pilots flying to or from the Phoenix area can utilize the Falcon Field, Chandler, and Glendale NDBs located at each airport.

Loran-C is a ground-based enroute navigational aid which utilizes a system of transmitters located in various locations across the continental United States. Loran-C varies from the VOR and NDB as pilots are not required to navigate using a specific facility (with the VOR and NDB pilots must navigate to and from a specific VOR or NDB facility). With a properly equipped aircraft, pilots can navigate to any airport in the United States.

GPS is an additional navigational aid for pilots enroute to the airport. GPS was initially developed by the United States Department of Defense for military navigation around the world. Increasingly, over the last few years, GPS has been utilized more in civilian aircraft. GPS uses satellites placed in orbit around the globe to transmit electronic signals which properly equipped aircraft use to determine altitude, speed, and navigational information. GPS is similar to Loran-C as pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigational facility. The FAA is proceeding with a program to gradually replace all traditional enroute navigational aids with GPS over the next decade.

An Airport Surveillance Radar (ASR) tower is located east of Runway 12L-30R. Owned and operated by the FAA, the ASR is used in regional air traffic control activities and provides air traffic control personnel with aircraft position and altitude information.

Terminal Area Navigational Aids:

Electronic navigational aids which are designed to aid pilots in locating the airport and making a safe landing are termed terminal area navigational aids. In addition to providing course guidance information for aircraft in the enroute phase of their flight, the previously mentioned Willie VORTAC and GPS navigational aids can be used by pilots when locating and landing at the airport. An Instrument Landing System (ILS), also aids pilots in locating and landing at the airport. The ILS is an approach landing aid designed to identify the exact approach path and descent to landing for properly equipped aircraft. The VORTAC only provides general course guidance information.

Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers established by the FAA using electronic navigational aids that assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions. Presently, the airport is served by ILS, VOR, TACAN, and GPS approach procedures to Runway 30C.

The ILS instrument approach procedure to Runway 30C provides for landings when cloud ceilings are as low as 200 feet above the ground and the visibility

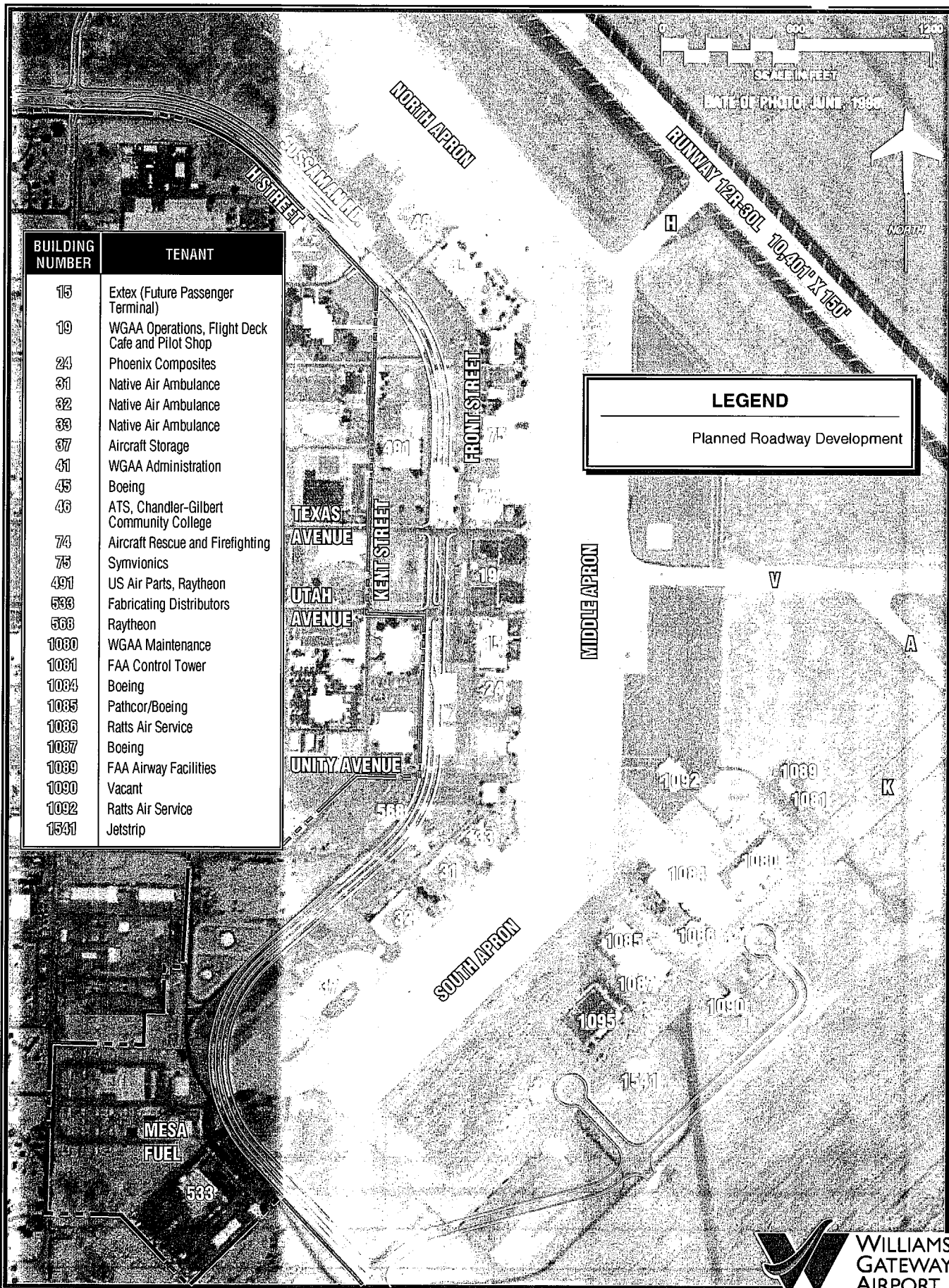
is reduced to $\frac{3}{4}$ of a mile. The VOR/TACAN and GPS instrument approach procedures provide for approaches when cloud ceilings are as low as 500 feet above the ground and visibility is reduced to one mile for aircraft with approach speeds less than 120 knots. For approach speeds between 121 and 140 knots the visibility minimums increase to one and one-half miles. For all other approach speeds, the visibility minimums increase to one and three-quarter miles.

LANDSIDE FACILITIES

Landside facilities include aircraft storage facilities, aircraft parking aprons, and support facilities such as fuel storage and aircraft rescue and firefighting facilities. Within the discussion of landside facilities is a description of existing general aviation services and airport tenants.

Aircraft Parking Apron

The aircraft parking apron at Williams Gateway Airport totals approximately 232,700 square yards and is divided into three sections as identified on **Exhibit 1D**. The north apron is constructed of concrete and encompasses approximately 88,700 square yards. This apron currently serves as the locally-based aircraft tiedown area, including aircraft associated with Arizona State University East and Chandler-Gilbert Community College flight training. The middle apron is constructed of concrete and encompasses approximately 90,100 square yards. The south apron is



constructed of concrete and encompasses approximately 53,900 square yards. This apron serves a number of existing industrial and commercial tenants. Pathcor plans to develop a new facility along the southwest end of the apron near Hangar 37.

Aircraft Storage Hangar

Hangar 37 provides covered aircraft storage for locally-based and transient aircraft. A former military hangar, Hangar 37 is located along the southwest side of the south apron. Hangar 37 is considered a "shade hangar" since it does not have doors on either end. Hangar 37 is a metal panel building approximately 22,500 square feet in size. It was built in 1943. While there are a number of additional aircraft hangars located at the airport, these are occupied by industrial and commercial tenants and will be summarized later in this section.

General Aviation Services

The WGAA provides fueling and line services at the airport. The Authority provides Jet-A and 100LL fuel, aircraft towing, wash rack, and auxiliary power unit services 24 hours a day. Fueling and line services are provided from Buildings 19 and 1363. The WGAA also maintains a pilot's lounge and flight planning room in Building 19. Building 19 was constructed in 1942 and is approximately 10,459 square feet in size.

Aircraft and pilot supplies are available at the Flight Deck Pilot Shop which is also located in Building 19. The Flight Deck Café is also located in Building 19. Ratts Air Service, located in buildings 1086 and 1092 provides aircraft painting services. Phoenix Composites, located in Hangar 24, provides support and maintenance services for experimental aircraft owners. Native Air Ambulance provides aircraft maintenance services. Airline Transport Professionals and University of North Dakota provide general aviation flight instruction.

Passenger Terminal Facilities

The WGAA is presently working on an interim passenger terminal building to accommodate passenger air service. The existing facility will serve as the interim passenger terminal building until a permanent terminal can be constructed.

Building 15 was constructed in 1968 and presently encompasses approximately 23,700 square feet. **Exhibit 1E** provides a depiction of the floorplan considered for Building 15 to serve as a passenger terminal building. As proposed, the building will provide space for aircraft ticketing, airline offices, security screening, holdroom, bag claim, automobile rental, retail space, and mechanized bag claim and outbound baggage devices. **Table 1G** summarizes proposed terminal square footage by functional area once renovated. The proposed site plan also includes the development of 362

automobile parking spaces to serve the passenger terminal building and Buildings 19 and 24. Approximately 20

of these spaces would be reserved for rental car ready and return.

TABLE 1G
Proposed Passenger Terminal
Building Square-Footage (Building 15)

Description	Square-Footage
Ticket Lobby	1,209
Airline Ticket Offices	465
Ticket Counters	484
Baggage Make-Up	781
Holdroom	7,162
Restrooms/Mechanical	1,752
Interview Room	108
Police Office	135
Communications Room	210
Restaurant	1,424
Riser Room	112
Retail	1,465
Auto Rental	194
Baggage Claim	2,860
Corridors/Open	4,902
Space/Baggage Devices	
Security Screening	299
Total	23,562
Source: Cullen/Burr Associates	

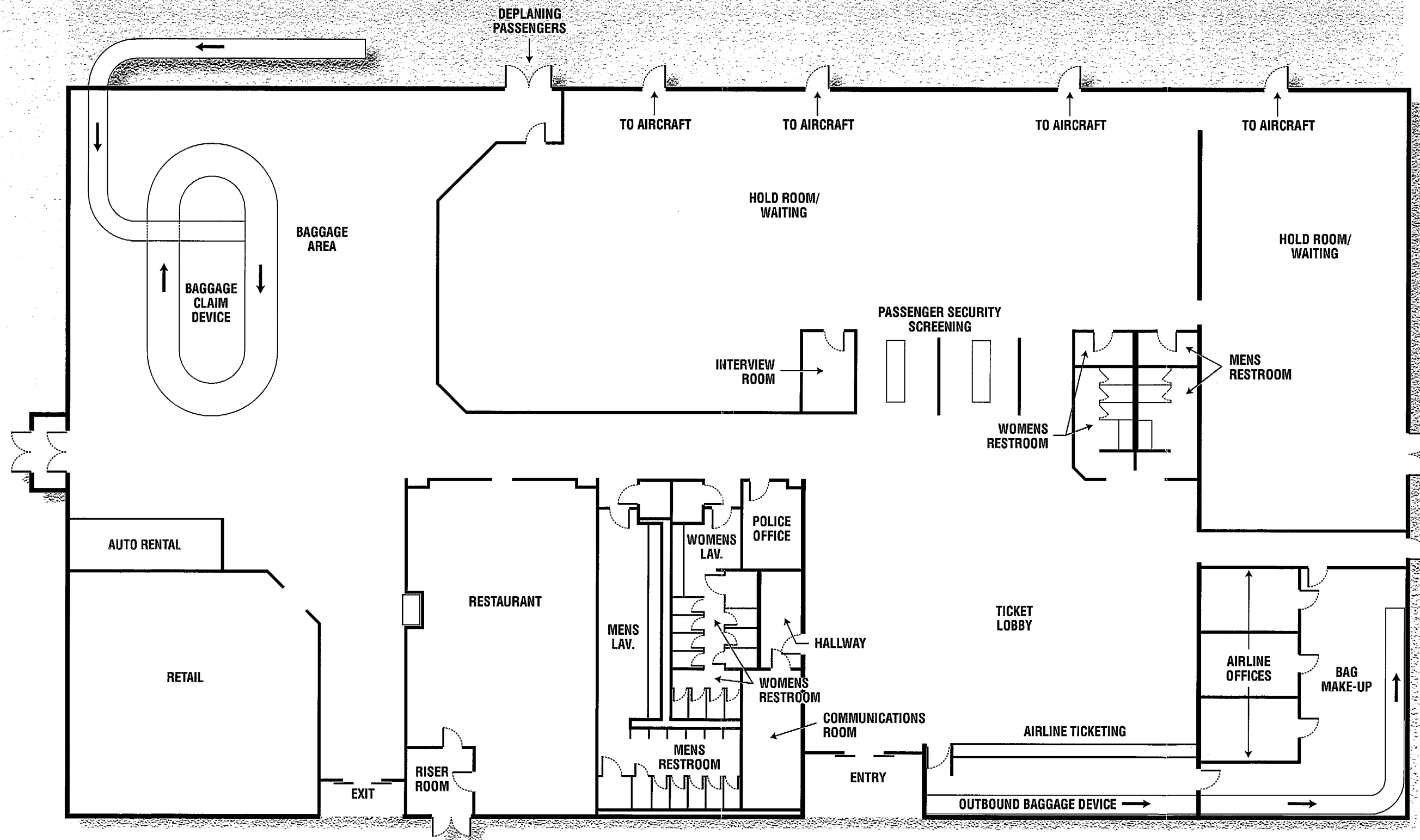
Aircraft Rescue and Firefighting

Aircraft rescue and firefighting (ARFF) services at the airport are provided under contract with the City of Mesa Fire Department. The airport facility is staffed 24 hours per day with six qualified fire fighters, two of which are dedicated to the airport at all times. The ARFF building (Building 74) is located along the west side of the Middle Apron at the terminus of Texas Avenue. **Table 1H** summarizes the airport's inventory of aircraft rescue and firefighting equipment. The WGAA will purchase an additional ARFF

vehicle in 1999 with a 1,500-gallon storage capability.

Airport Traffic Control Tower

The airport traffic control tower (ATCT) is located along Taxiway K west of Runway 12R-30L in Building 1081. The ATCT operates from 6:00 a.m. to 9:00 p.m. Monday through Friday and from 8:00 a.m. to 4:00 p.m. on weekends. Air traffic control services are provided at the airport by Serco Management Services through a contract with the



Source: Cullen/Burr Associates



FAA. Equipment within the ATCT allows air traffic control personnel to

control the operation of airfield lighting and the airport beacon.

TABLE 1H

Aircraft Rescue and Firefighting Equipment

Attack 215 (Index A)

- 1995 Ford 350 4x4
- Equipped with 450/100 Twin Agent Skid Unit. Includes 450 pounds Purple K and 100 gallons of premixed 6% AFFF.
- Equipped with BLS medical equipment, Vetter rescue air bags, Amkus Extrication System, portable power saw, various hand tools, aviation radio.
- Portable fire extinguishers include: 20 pounds Purple K, 30 pounds METAL-X, and 2.5 gallons pressurized water.

Foam 215 (Index B)

- Emergency One Titan (T-1) 4x4. Designed to transport and deliver water and foam in various fire fighting situations.
- Provides 1,500 gallons water, 200 gallons AFFF, 500 pounds dry chemical.
- Equipped with 110 volt air compressor, aviation radio, generator, 30 pound METAL-X extinguisher, portable ABC-type fire extinguishers, Sierra rescue crash kit, 20-foot extension ladder, various hand tools.

Foam 225 (Back Up Unit)

- Oshkosh MT-1500 (p-4) 4x4. Designed to transport and deliver water and foam in various fire fighting situations.
- Carries 1,500 gallons of water, 180 gallons of AFFF.
- Equipped with portable power saw, rescue ladder, crash kit, and various types of rescue hand tools.
- Portable fire extinguishers include 20 pounds Purple K, 30 pounds METAL-X, and 2.5 gallons pressurized water.

Engine 215

- 1983 Van Pelt
- 1,500 gallon per minute structural pumper, 750 gallon water tank, 30 gallon AFFF tank.
- Equipped with ALS medical equipment, 35-foot extension ladder, 14-foot roof ladder, 200 feet of 1" booster line, 900 feet of 2.5" hose, 800 feet of 5" hose, and various types of rescue hand tools.
- Portable fire extinguishers include: 20 pounds Purple K and CO².

Tanker 215

- 1986 Kenworth water tanker.
- 4,000 gallon water tank.
- Equipped with 100 feet of 2.5" hose for ARFF vehicle supply.

Patrol 215

- 1986 Chevrolet Suburban. Support vehicle.

Source: Williams Gateway Airport Authority
AFFF - Aqueous Film Forming Foam

Airport Maintenance

The WGAA airfield, vehicle, and building maintenance operate from Building 1080 located south of the ATCT. Building 1080 was constructed in 1980 and is approximately 23,456 square feet in size. A site plan was recently completed to identify the long term use and configuration of the maintenance building and maintenance yard. The site plan includes fencing the entire area and the development of a separate 10,000 square-foot vehicle maintenance building, a fuel island and washrack, and 138 spaces for employee automobile and maintenance equipment parking and storage.

Fuel Storage

All aviation fuel storage facilities at the airport are owned and operated by the Airport Authority. Jet-A fuel is stored in two 25,000 gallon above-ground fuel storage tanks located north of Building 533. 100LL is stored in a 5,000 gallon mobile fuel truck. Mobile fuel trucks are used to deliver fuel to aircraft. The WGAA owns a 5,000 gallon refueller for the dispensing of jet fuel to aircraft. The WGAA is completing plans for the development of a fuel farm at the south end of the south apron with the capability to provide 150,000 gallons of Jet-A fuel storage. The WGAA is also considering the installation of a self-service fuel island for the storage and dispensing of 100LL aviation fuel.

Fencing

The north, east, and south sides of the airport are enclosed with 3-strand barbed wire and chain link fencing. Chain link fencing was installed along the west side of the airfield in 1998.

Utilities

Electrical, telephone, water, sanitary sewer, and natural gas services are available at the airport. Electrical service is provided by Salt River Project (SRP) Electric. Telephone service is provided by U.S. West Communications. Southwest Gas currently provides natural gas service. The City of Mesa provides water and sanitary sewer services. Concurrent with the Sossaman Road construction is the extension of new utility lines to the airport for future use.

Airport Tenants

Raytheon - Buildings 491 and 568

Raytheon provides laboratory research supporting the aviation industry and U.S. Air Force Research Laboratories, and builds flight simulators. The company conducts research in air crew training and testing of hardware and software for flight simulators.

U.S. Air Parts - Building 491

U.S. Air Parts, Ltd. is an FAA-approved manufacturer of reciprocating aircraft engine parts.

The Boeing Company - Building 45
The Boeing/FedEx Cooperation MD-10 flight test program is being coordinated in Building 45.

Advanced Training Systems International, Inc. - Building 46
Advanced Training Systems, Inc. (ATSI) specializes in tactical aviation training, from primary flight training through advanced tactics courses with professional flight test services for the aerospace industry.

Chandler-Gilbert Community College - Hangar 46
The Maricopa Community College District, through the Chandler-Gilbert Community College (CGCC) Aircraft Flight Technology Programs, offers pilot certifications and ratings and associate degrees in airway science technology and aviation maintenance technology. CGCC has partnerships with the University of North Dakota for flight training and with Embry-Riddle University for aviation maintenance courses.

Symvionics - Building 75
Symvionics, Inc. designs and manufactures flight simulators and training systems for the U.S. military.

Extex - Building 15
Extex is an FAA-approved turbine engine parts manufacturer. The company's administrative and engineering units are located at the airport.

Airline Transport Professionals - Building 15
Airline Transport Professionals provides a full range of flight training

towards advanced flight ratings and certificates.

Phoenix Composites, Inc. - Hangar 24

Phoenix Composites is a support company for builders of experimental aircraft, providing assistance or supervision for persons in building their own experimental aircraft. Phoenix Composites also provides general aviation maintenance for all types of experimental aircraft.

Native American Air Ambulance, Inc. - Hangars 31, 32, & Building 33
Native American Air Ambulance, Inc. (NAAA) is an Arizona based 100 percent Native American owned air ambulance company. NAAA provides 24-hour air ambulance services, transporting members of various tribes in the Southwestern United States to Indian Health Service-established medical centers. NAAA also offers air charter services and aircraft maintenance services.

The Boeing Company - Hangar 1084
The Boeing Company is upgrading the T-38 avionics systems for the U.S. Air Force. The upgrade program involves providing the T-38 with more reliable and modern avionics and subsystems that will extend the aircraft's life well into the 21st Century. The company is also designing and developing upgrades for the T-38 Operational Flight Trainer, Unit Training Device and Training Systems Support Center.

Pathcor - Building 1085
Pathcor - a company which manufactures, installs and supports specialized electronic guidance

recording equipment – operates its avionics division at Williams. Pathcor designs and manufactures a wide range of specialized electronic devices including microprocessor based systems, radio frequency transmitters and synthesized receivers. Pathcor will construct a new facility along the southwest edge of the south apron adjacent to Hangar 37.

The Boeing Company - 1095

The McDonnell Douglas Aerospace Services Company (MDASCO) F/A-18 Structural Repair Facility is a division of the Boeing Aircraft Company. MDASCO is currently modifying the F/A-18 aircraft trailing edge flaps, repairing various F/A-18 movable flight surfaces, radomes and shrouds and other McDonnell Douglas-built aircraft, including the T-45 trainer and the C-17 cargo plane.

Ratts Aircraft Painting - Hangars 1092 and 1086

Ratts Aircraft Painting provides a full range of aircraft painting and stripping services for civilian, corporate and military aircraft.

U.S. Bearing & Fabrication-Distributors - Building 533

Fabricating/Distributors manufactures aviation parts and material handling systems. A separate company, U.S. Bearing makes components and power transmission parts for the aviation and other industries.

Simula - Building 1124

Simula is a diversified technology and engineering company that designs and manufactures occupant safety systems and devices. The company's operation

at WGA focuses on the assembly of airbags for military helicopters.

Am-Safe - Buildings 1125, 1126 & 1122

Am-Safe is currently conducting tests at Williams Gateway Airport on new technology for aircraft safety systems.

Jetstrip - Building 1541

Jetstrip provides a full-range of paint stripping services using plastic and starch type aggregates.

VICINITY AIRSPACE, AIR TRAFFIC CONTROL, AND AIRPORTS

VICINITY AIRSPACE

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has established an airspace structure that regulates and establishes procedures for aircraft using the National Airspace System. The U.S. airspace structure provides for two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G.

Class A airspace includes all airspace from 18,000 feet above mean sea level (MSL) to Flight Level 600 (approximately 60,000 feet MSL). Class B airspace is controlled airspace surrounding high activity commercial service airports (i.e. Phoenix Sky Harbor International Airport). Class C airspace is controlled airspace surrounding lower activity commercial service and some military airports. Class D airspace is controlled airspace surrounding airports with an air traffic

control tower. All aircraft operating within Class A, B, C, and D airspace must be in constant contact with the air traffic control facility responsible for the particular airspace. Class E airspace is controlled airspace that encompasses all instrument approach procedures and low altitude federal airways. Only aircraft conducting instrument flights are required to be in contact with air traffic control when operating in Class E airspace. Class G airspace is uncontrolled airspace.

Airspace in the vicinity of the airport is impacted by the number of airports and high level of aircraft activity in the Phoenix metropolitan area. Airspace in the vicinity of Williams Gateway Airport is depicted on **Exhibit 1F**. The airport is located within Class D airspace. The Class D airspace for the airport extends outward from the center of the airport to a radius of five nautical miles from the surface to 3,900 feet MSL. During periods when the control tower is not active the Class D airspace surrounding the airport reverts to Class E airspace.

The airport is located adjacent to the Class B airspace surrounding Phoenix Sky Harbor International Airport. The Class B airspace surrounding Phoenix Sky Harbor provides for areas of controlled airspace along primary arrival routes to the airport. The boundaries of the Class B airspace vary to provide for operations to surrounding suburban airports. The Class B airspace extends from the surface to 10,000 feet near the airport. The floor of the Class B airspace gradually increases outward from the airport

which allows for aircraft operations under the Class B airspace.

An area of Class E airspace surrounds the entire Metropolitan Area due to the number of airports and high level of activity in the area. A Mode C Veil extending for a 30-nautical mile radius of Phoenix Sky Harbor International Airport requires all aircraft to have an operable altitude reporting transponder. This allows air traffic control personnel to identify the location and altitude of aircraft for traffic separation and control.

Approximately 15 nautical miles east of the airport is an area of special-use airspace designated as a Military Operations Area (MOA). MOAs define areas of high level military activity and are intended to segregate military and civilian aircraft. While civilian operations are not restricted within a MOA, civilian aircraft are cautioned to be alert for military aircraft when operating in the MOA. Military operations within the Outlaw MOA are normally conducted between 7:00 a.m. and 6:00 p.m. Monday through Friday between 3,000 and 8,000 feet above the ground. Military Training Routes are located near the airport as well. Military jets travel on these routes at altitudes above 10,000 feet and at speeds in excess of 250 knots.

An area of restricted airspace is located approximately 20 miles southeast of the airport. Restricted airspace surrounds areas of significant hazard to aircraft operations such as artillery firing, aerial gunnery, or guided missiles. Restricted areas R-2310 A, B, and C

operate intermittently and at altitudes between 10,000 and 35,000 feet. Aircraft operations are restricted during the specified times and between the defined altitudes. While civilian aircraft operations are not prohibited during periods of inactivity or below the defined altitudes, aircraft are strongly recommended to avoid operating in restricted areas.

While not considered part of the U.S. Airspace Structure, the boundaries of National Park Service Areas, U.S. Fish and Wildlife Service areas, and U.S. Forest Wilderness and Primitive areas are noted on aeronautical charts. While aircraft operations are not specifically restricted over these areas, aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface. **Exhibit 1F** depicts the boundaries of these areas near Williams Gateway Airport.

For aircraft enroute or departing the Phoenix metropolitan area using VOR navigational facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor airways are corridors of airspace eight miles wide that extend upward from 1,200 feet MSL to 18,000 feet MSL and extend between VOR navigational facilities. All Victor Airways in the metropolitan area emanate from the Phoenix VORTAC and are identified on **Exhibit 1F**.

AIR TRAFFIC CONTROL

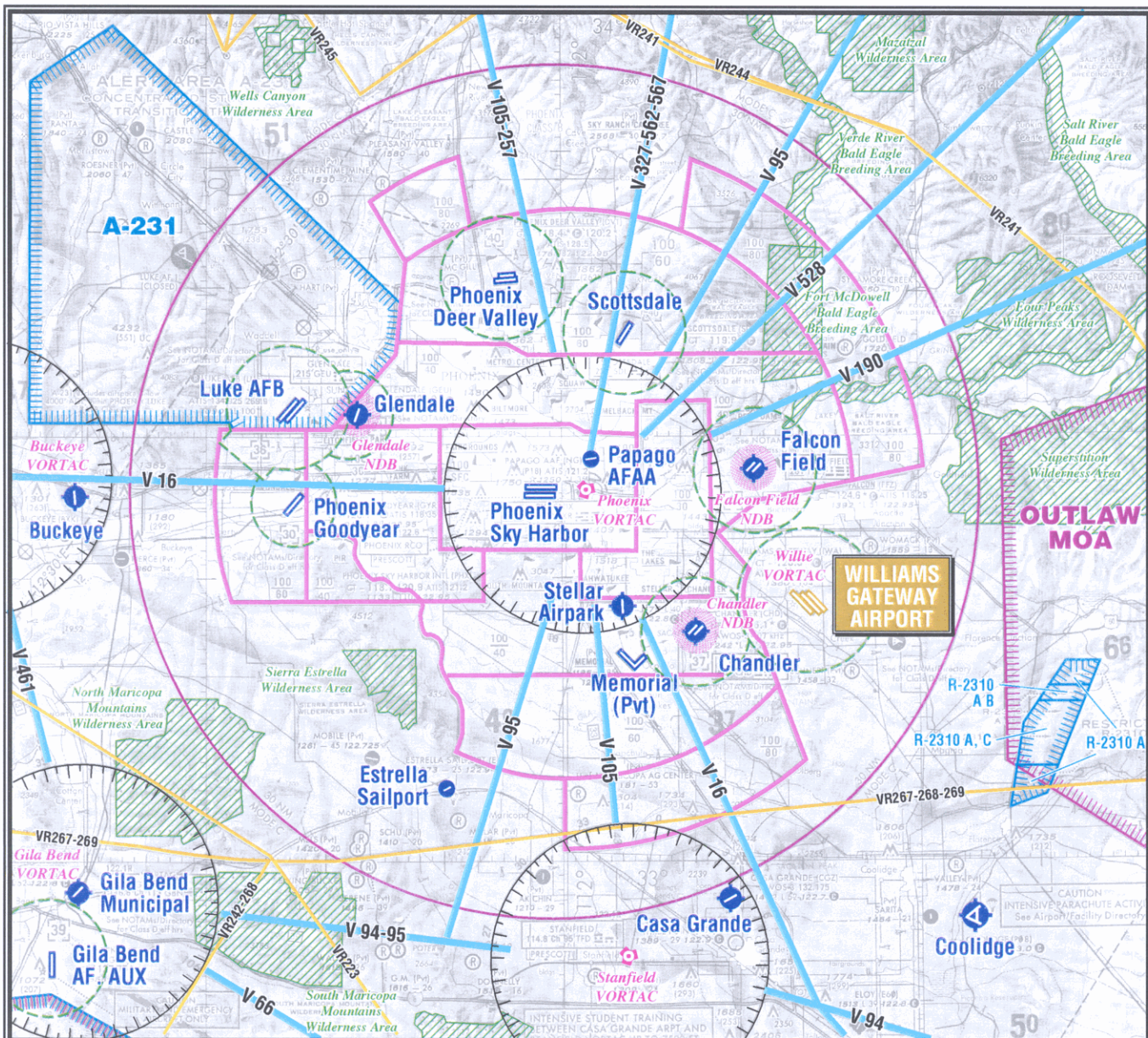
The complexity of the airspace in the metropolitan area produces several levels of air traffic control. Aircraft

operating within the Class D airspace surrounding the airport are controlled by air traffic control personnel located on the airport. Aircraft operating within the Class B airspace surrounding the Phoenix Sky Harbor International Airport or aircraft operating on an instrument flight to airports in the Phoenix metropolitan area are controlled by Phoenix Approach Control located at the Phoenix Sky Harbor International Airport. Aircraft arriving or departing the Phoenix metropolitan area are controlled by the Albuquerque Air Route Traffic Control Center (ARTCC). The Albuquerque ARTCC controls aircraft in a large, multi-state area.

VICINITY AIRPORTS

There are a number of airports of various sizes, capacities, and functions near Williams Gateway Airport, as indicated on **Exhibit 1F**. Generally, airports which have any significant influence on the airport are in approximately a 30 nautical mile range. The airports described below are those within 30 nautical miles of Williams Gateway Airport or are important to the airspace and control environment of the area. Information pertaining to each airport was obtained from the FAA 5010-1 Airport Master Record Form.

Casa Grande Municipal Airport is a public use airport located approximately 22 nautical miles southwest of Williams Gateway Airport. The airport is served by Runway 5-23 which is 5,200 feet long by 100 feet wide and is equipped with an Instrument Landing System which is used



LEGEND

- | | | | |
|--|---|--|---|
| | Airports with hard-surfaced runways 1500 ft. to 8069 ft. | | Prohibited, Restricted, Warning and Alert Areas |
| | Airports with hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft. | | Military Operations Area (MOA) |
| | VORTAC | | Class B Airspace |
| | Non-Directional Radiobeacon (NDB) | | Class D Airspace |
| | Compass Rose | | MODE C Veil |
| | Victor Airways | | |
| | Military Training Routes | | |



Source: Phoenix Sectional Aeronautical Chart
National Oceanic and Atmospheric
Administration (NOAA)
Effective Date: May 21, 1998

extensively for flight training in the Phoenix area. Williams Gateway Airport provides the only other ILS in the Phoenix area available for training operations. (Instrument landing system training operations are discouraged at Phoenix Sky Harbor.) Approximately 29 single-engine aircraft are based at the airport. FBO, aircraft tie-down, and hangar storage services are available at Casa Grande Municipal Airport.

Chandler Municipal Airport is located approximately 8 nautical miles southwest of Williams Gateway Airport. Owned and operated by the City of Chandler, the airport is equipped with two parallel runways, the longest is 4,850 feet in length. Approximately 295 aircraft are based at Chandler Municipal Airport. The airport is served by a control tower and on-site NDB. A full-range of FBO, aircraft tie-down, and hangar storage services are available at Chandler Municipal Airport.

Coolidge Municipal Airport, situated approximately 25 nautical miles southeast of Williams Gateway Airport, is owned and operated by the City of Coolidge. The airport is served by two runways with Runway 5-23 providing the greatest length at 5,550 feet long by 150 feet wide. Coolidge Municipal Airport has one based aircraft. FBO, aircraft tie-down, and hangar storage services are available at Coolidge Municipal Airport.

Estrella Sailport is situated approximately 29 nautical miles southwest of Williams Gateway Airport. The public use airport is privately-owned and provides four unpaved

runways (three of which are parallel runways). An estimated 23 aircraft including 3 single engine and 20 gliders are based at the airport. Tiedown and FBO services are only available for glider aircraft.

Memorial Airfield, owned by the Gila River Indian Community, is located approximately 15 nautical miles southwest of Williams Gateway Airport. The airport is served by a single paved runway (12-30) at 8,577 feet long by 100 feet wide.

Mesa Falcon Field Airport, located approximately 10 nautical miles northwest of Williams Gateway Airport, is owned and operated by the City of Mesa. The airport is supported by parallel runways oriented in a northeast-southwest direction. Runway 4R-22L provides the greatest length measuring 5,100 feet long by 100 feet wide. An estimated 806 aircraft are based at the airport most of which are single engine piston aircraft. The airport is served by an airport traffic control tower and an on-site NDB. FBO, aircraft tie-down, and hangar storage services are available at Mesa Falcon Field Airport.

Phoenix Sky Harbor International Airport is located approximately 19 nautical miles northwest of Williams Gateway Airport in the City of Phoenix. The airport is owned and operated by the City of Phoenix and is the largest air carrier airport within the State of Arizona, and currently the only commercial jet airport within the Phoenix area. Phoenix Sky Harbor International Airport is served by all of the major airlines with Southwest and

America West utilizing the airport as a hub. The airport is also served by major all-cargo carriers.

Phoenix Sky Harbor International Airport is equipped with two 150 foot wide parallel runways over 10,000 feet in length. A third parallel runway is under construction. An array of instrument approach aids, including an instrument landing system (ILS), aid pilots on approach during inclement weather conditions. The airport is served by seven published instrument approaches with the ILS 8 approach certified for Category I weather minimums (200 foot cloud ceiling and one-half mile visibility).

Although the airport's primary role is to provide commercial service to the area, it also serves general aviation activity. The airport has approximately 242 based aircraft, including ten jets and 11 helicopters. Fixed Based Operator (FBO), aircraft tie-down, and hangar storage services are available at Phoenix Sky Harbor International Airport.

Scottsdale Airport, located approximately 23 nautical miles northwest, is owned and operated by the City of Scottsdale. The airport is served by Runway 3-21 which is 8,251 feet long by 75 feet wide and an airport traffic control tower. Approximately 400 aircraft including 55 business jets are based at the airport. FBO, aircraft tie-down, and hangar storage services are available at Scottsdale Airport.

Stellar Airpark is a privately-owned airport open to public use. Located approximately 13 nautical miles west of

Williams Gateway Airport, the airport is served by Runway 17-35 which is 4,005 feet long by 55 feet wide. Approximately 139 aircraft are based at the airport. FBO, aircraft tie-down, and hangar storage services are available at Stellar Airpark.

Superior Municipal Airport is located approximately 26 nautical miles east of Williams Gateway Airport in Pinal County. The airport is unattended. A single dirt-surfaced runway 3,500 feet long by 150 feet wide is available for use.

AIRPORT ACCESS AND PARKING

Chandler Boulevard/Williams Field Road is the primary east-west thoroughfare linking Williams Gateway Airport with the communities of Gilbert and Chandler to the west. The airport is bordered on the west by Power Road and on the east by Ellsworth Road. Power Road provides access to Mesa to the north. Ellsworth Road provides access to Queen Creek to the south. The Pecos Road alignment borders airport property to the south. The Ray Road alignment is located along the northern airport boundary.

Power Road provides direct access to the Superstition Freeway (U.S. Highway 60), located five miles north of Williams Gateway Airport. The Superstition Freeway provides direct access to central Mesa and Phoenix and connects with I-10 and I-17. The Santan Freeway is included in regional transportation planning to provide additional highway capacity for the

southeast valley. As planned, the Santan Freeway would cross Power Road approximately one-half mile north of the airport. Approximately two miles east of Power Road, the Santan Freeway would turn north to connect with the Superstition Freeway in Mesa.

A 10-mile section of Ellsworth Road from Elliot Road (to the north) to Hunt Highway (to the south) is planned to be widened to five lanes to accommodate forecast traffic through the year 2015. Ellsworth Road will have the capability to expand to seven lanes as needed to accommodate additional traffic volumes.

A realignment of Pecos Road is under consideration. Ultimately, Pecos Road will extend between Power Road and Ellsworth Road.

Presently, all airport facilities are accessed via Utah Avenue from Power Road, through the former air base main entrance and adjacent campus. The airport facilities will ultimately be accessed via Ray Road to Sossaman Road. Presently, Phase I of the Ray Road/Sossaman Road construction is being completed. This will extend Sossaman Road from Ray Road to approximately Tahoe Avenue. Phase II will extend Sossaman Road south to Pecos Road. Concurrent with the Sossaman Road construction is the installation of primary utility lines including electrical, telephone, and water and sewer lines.

A service road extends around the north, east, and south sides of the airfield which allows for emergency vehicle and airport maintenance and

security vehicle access to these portions of the airport without crossing the runways. Employees of Simula and Am-Safe and users of the firing range must use the service road to gain access to these facilities. Signage is in place to reduce the chances of vehicles inadvertently accessing airfield operational areas. Presently, only portions of the service road are paved and only provide one lane access.

Automobile parking areas are available at each hangar and industrial/commercial facility at the airport. The previous master plan estimated that a total of 1,353 parking spaces (445,625 square feet) were available for use at the airport.

On-demand taxi, limousine service, and rental cars are available at the airport. The metropolitan area is served by major bus, rail, and trucking companies. No rail or bus service is currently available at the airport. Bus Service is available at the adjacent campus.

LAND USES

Williams Gateway Airport is located in Maricopa County in the East Valley. More specifically, it is located in the City of Mesa, adjacent to the towns of Gilbert and Queen Creek and portions of unincorporated Maricopa County and Pinal County. Existing land uses in this area are varied. The primary land uses in the immediate vicinity of the airport are educational facilities, agricultural fields, and automobile testing grounds. Further north, closer to the Superstition Freeway (U.S. 60),

urban land uses are prevalent, including commercial and residential development. This urban development is expanding southward towards the airport.

In 1994, the Williams Gateway Airport Authority initiated the preparation of a regional planning study for the airport environs. Participants in the study included representatives of Apache Junction, Chandler, Gilbert, Maricopa County, Mesa, Pinal County, Queen Creek, and Maricopa Association of Governments (MAG). The *Williams Regional Planning Study (WRPS)* was completed in 1996. The purpose of the study was to develop a land use plan which would (1) maximize the economic development potential of the airport and surrounding area, (2) minimize future land use conflicts, and (3) establish a regional land use framework for the area that enhances the quality of life. The report identifies both existing and recommended future land uses in the vicinity of the airport, as well as land use policies designed to ensure the long-range operation of the facility and the protection of residents in the area.

Exhibit 1G reflects the recommended land use plan as adopted by the City of Mesa, the Towns of Gilbert and Queen Creek, and Maricopa County. Close to the airport and within the year 2015 65 DNL noise contour (as determined during the previous master planning effort), recommended land uses are commercial/industrial and aviation-related, both of which are compatible with airport operations. Residential land uses are identified for areas buffered from the on-airport activities; no residential land uses are identified

within the existing 65 DNL noise contour.

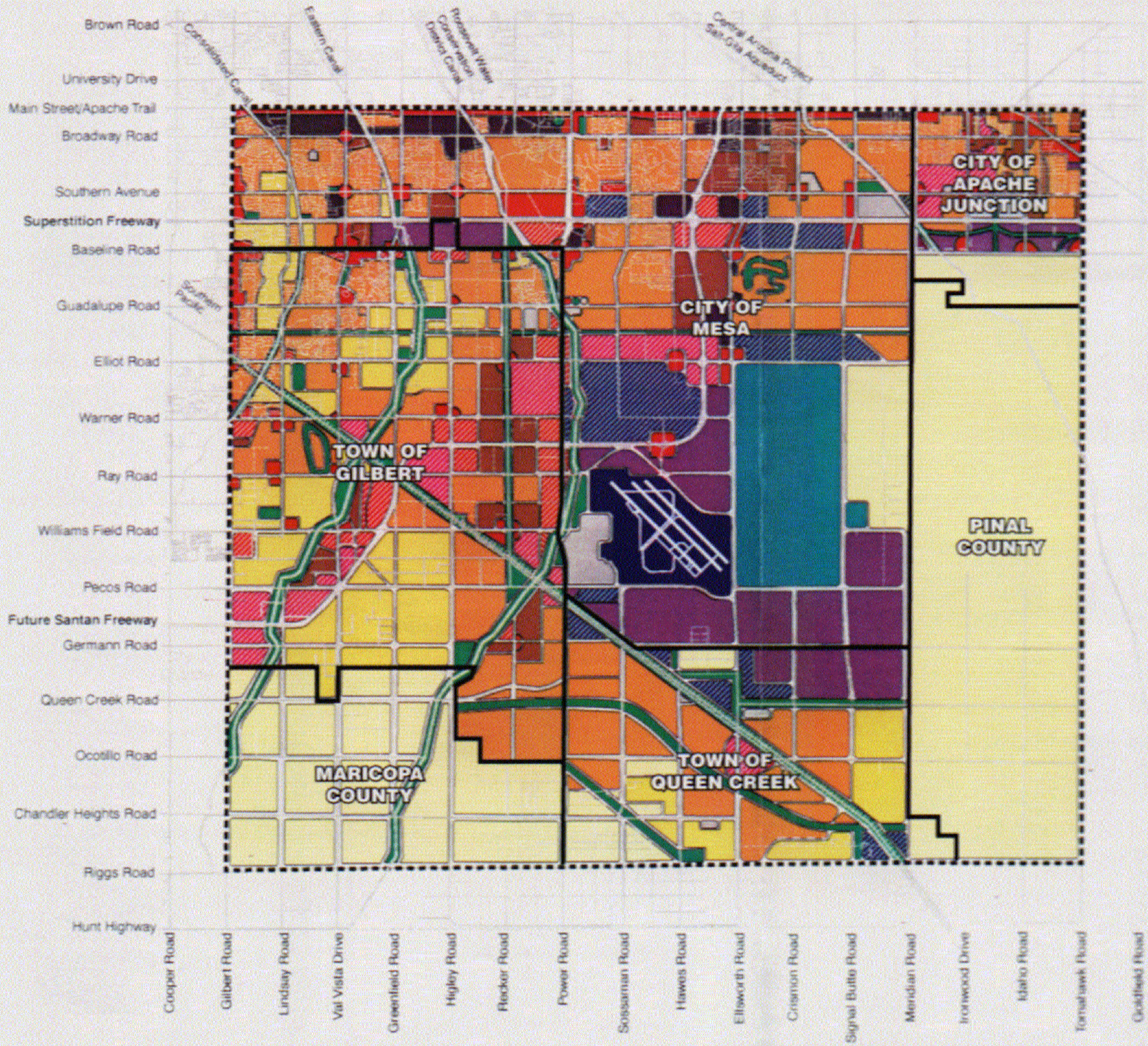
In addition to the Land Use Plan, the WRPS also includes an implementation program. The purpose of this section is, in part, to provide the affected communities with regulatory tools to further protect both the continuing operation of the airport (and thus, its regional economic benefit) and existing and future residents in the area. The implementation program calls for the adoption of airport overflight districts within the zoning ordinances of Mesa, Gilbert, Queen Creek, and Maricopa County. As of September 1998 these regulatory tools have not yet been adopted.

The City of Mesa is in the process of developing an overlay zone which will apply to both Mesa Falcon Field and Williams Gateway Airport and which incorporates the concepts identified in the WRPS. All jurisdictions are referring plans for development projects in the vicinity of the airport to the Williams Gateway Airport Authority staff for input. Most are also requiring that notices be placed on subdivision plats and that buyers be advised of the presence of the airport.

SOCIOECONOMIC PROFILE

Williams Gateway Airport is located in the southeast portion of the Phoenix Metropolitan Area in an area commonly referred to as the "East Valley". Generally, the East Valley includes the cities of Tempe, Guadalupe, Chandler, Gilbert, Queen Creek, Mesa, and unincorporated portions of Maricopa

98MPO3-1G-4/20/99



LEGEND

- Rural Residential
- Low Density Residential
- Medium Density Residential
- Medium-High Density Residential
- High Density Residential
- Mixed Use
- Commercial/Office
- Commercial
- Proving Grounds
- Commerce Park/Agri-Business
- Industrial/Agri-Business
- Aviation Related Industrial
- Public/Quasi-Public
- Open Space
- WRPS Area Boundary

Source: "Williams Regional Planning Study"
Exhibit 9-1
BRW, Inc. November 28, 1995



Scale: 1" = Approx. 9,600'



and Pinal counties. While Williams Gateway Airport could potentially serve the air transportation needs for the entire East Valley, Williams Gateway Airport is ideally situated to primarily serve the City of Mesa, Town of Gilbert, Town of Queen Creek, and Apache Junction.

Mesa, Gilbert, and Queen Creek are some of the fastest growing portions of the Phoenix Metropolitan Area. As shown in **Table 1J**, the combined population for Mesa, Gilbert, and Queen Creek grew over 258 percent between 1980 and 1995. Maricopa County grew 167 percent during the same period. Mesa, Gilbert, and Queen Creek's share of total Maricopa County population has increased over this period as well. The combined Mesa, Gilbert, and Queen Creek populations are projected to

continue to grow at a faster rate than the entire Maricopa County and continue to increase their share of the total Maricopa County population through 2010. Total employment has experienced similar growth trends to population. As shown in **Table 1K**, the combined employment for Mesa, Gilbert, and Queen Creek grew over 46 percent between 1990 and 1995. Maricopa County total employment grew 30 percent during the same period. Mesa, Gilbert, and Queen Creek's share of total Maricopa County employment increased over this period as well. The outlook for employment is for continued strong growth through the year 2020 with the combined employment for Gilbert, Queen Creek, and Mesa increasing its share of total Maricopa County employment through the year 2010.

TABLE 1J Historical and Forecasted Population						
Year	Maricopa County	Mesa	Gilbert	Queen Creek	Total Mesa, Gilbert, Queen Creek	Share of Maricopa County
1980	1,509,262	163,594	5,717	1,378	171,049	11.3%
1990	2,213,695	288,104	29,122	2,667	319,893	14.4%
1995	2,528,700	372,378	65,460	5,108	442,946	17.5%
Average Annual Growth Rate 1980-1995						
	3.5%	5.6%	17.6%	9.1%	6.5%	
Projections						
2000	2,954,150	425,238	108,534	7,376	541,148	18.3%
2005	3,329,550	480,164	132,812	10,659	623,635	18.7%
2010	3,709,575	540,608	174,690	13,965	729,263	19.6%
2015	4,101,775	567,741	201,393	17,205	786,339	19.1%
2020	4,516,100	593,962	244,842	20,505	859,309	19.0%
Average Annual Growth Rate 1995-2020						
	2.3%	1.9%	5.4%	5.7%	2.7%	
Source: Maricopa Association of Governments (MAG)						

TABLE 1K**Historical and Forecast Employment**

Year	Maricopa County	Mesa	Gilbert	Queen Creek	Total Mesa, Gilbert, Queen Creek	Share of Maricopa County
1990	975,037	93,561	6,060	754	100,375	10.3%
1995	1,264,800	128,373	16,838	1,439	146,650	11.5%
Average Annual Growth Rate 1980-1995						
	5.3%	6.5%	22.7%	13.8%	7.9%	
Projections						
2000	1,482,983	164,772	21,230	2,015	188,017	12.6%
2005	1,678,093	187,277	35,593	2,807	225,677	13.4%
2010	1,877,045	214,936	45,808	7,103	267,847	14.2%
2015	2,042,684	238,241	58,900	8,432	305,573	14.9%
2020	2,212,889	264,158	63,748	9,796	337,702	15.2%
Average Annual Growth Rate 1995-2020						
	2.3%	2.9%	5.5%	8.0%	3.4%	
Source: Maricopa Association of Governments (MAG)						

As shown in **Table 1L** the median household income for Gilbert and Queen Creek exceed the median household income for Maricopa County while Mesa is slightly below that level. The East Valley is home to a number of high-tech firms including Motorola, Intel, Boeing

Helicopter, Allied Signal, and Orbital Sciences which provide a number of executive/managerial, professional speciality, and technical occupations that contribute to the higher median household incomes in these areas.

TABLE 1L**Median Household Income**

	1990	1995
Maricopa County	\$30,797	\$35,623
City of Mesa	30,273	33,676
Town of Gilbert	41,081	51,660
Town of Queen Creek	36,806	43,429
Source: Arizona Department of Economic Security		

Table 1M summarizes local economic growth indicators compiled by the

Arizona Department of Commerce for Mesa, Gilbert, and Queen Creek. These

growth indicators signify the economic expansion and development in each of these communities. Taxable sales and postal receipts provide an indication of the degree of commerce conducted in each community, while new building

permits and net assessed valuation provide an indication of the growth in commercial and residential development. School enrollment figures can corroborate population growth figures.

TABLE 1M
Local Economic Growth Indicators

Year	Taxable Sales	Postal Receipts	New Building Permits	School Enrollment	Net Assessed Valuation
City of Mesa					
1990	\$1,948 ¹	\$30,847 ¹	1,663	62,052	\$1.27 ²
1995	5,013	43,419	6,029	69,160	1.27
1996	5,462	55,088	6,515	70,035	1.30
Town of Queen Creek					
1991	N/A	\$122,794	12	874	\$25,533,124
1995	\$19,386,400	315,657	137	1,196	37,184,597
1996	25,459,330	337,535	132	1,193	37,495,656
Town Of Gilbert					
1990	\$332,560,629	\$1,134,861	906	10,941	\$161,420,873
1995	677,961,200	3,076,310	4,823	17,754	223,197,146
1996	889,358,500	3,354,857	6,627	17,537	266,505,721
Source: Arizona Department of Commerce					
¹ in thousands					
² in billions					

CLIMATE

The regional climate is typical of south-central Arizona: warm, dry desert. The normal daily minimum temperature ranges from 41 degrees Fahrenheit in January to 81 degrees Fahrenheit in July. The normal daily maximum temperature ranges from 66 degrees Fahrenheit in January to 106 degrees Fahrenheit in July. July is usually the

hottest month with a mean maximum temperature of 108.4 degrees Fahrenheit.

The region can expect approximately 7.6 inches of precipitation annually. Clear skies predominate in this climate. On average, there are 210 clear days each year, 85 partly cloudy days, and 70 days with cloudy skies.

SUMMARY

The information discussed on the previous pages provides a foundation upon which the remaining elements of the planning process will be constructed. Information on current airport facilities and utilization will serve as a basis, with additional

analysis and data collection, for the development of forecasts of aviation activity, and facility requirement determinations. The inventory of existing conditions is the first step in the complex process of determining those factors which will meet projected aviation demand in the community and region.

DOCUMENT SOURCES

A variety of different documents were referenced in the inventory process. The following listing reflects a partial compilation of these sources. The listing does not include the data provided directly by the WGAA, or drawings which were referenced for information. An on-site inventory and interviews with airport staff and tenants contributed to the development of the inventory effort.

Phoenix Sectional Aeronautical Chart, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 59th Edition, April 23, 1998 Edition

Phoenix VFR Terminal Area Chart, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 18th Edition, April 23, 1998 Edition

U.S. Terminal Procedures, Southwest Volume 1 of 2, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, August 13, 1998 Edition

Airport/Facility Directory, Southwest U.S., U.S. Department of Commerce, National Oceanic and Atmospheric Administration, August 13, 1998 Edition

Williams Air Force Base Master Plan, October 1993, Coffman Associates, Inc.

Williams Area Transportation Plan, March 1997, JHK & Associates

Williams Regional Planning Study, March 1996, BRW, Inc.

Corridor Study for Ellsworth Road, November 1997, CH2MHill

Williams Gateway Airport Strategic Economic Development Plan and Industrial/Commercial Master Plan, April 1995, RKG Associates, Inc.

The Vision Williams Gateway Airport, March 1, 1995, RKG Associates, Inc.

Williams Campus Master Plan, January 1996, BRW, Inc.

Quit Claim Deed, April 30, 1998

A number of internet web sites were accessed and contributed information for the inventory effort. These include:

Williams Gateway Airport
<http://www.flywga.org>
Arizona Department of Commerce
<http://www.state.az.us>

Town of Gilbert
<http://www.ci.gilbert.az.us>
Town of Mesa
<http://www.ci.mesa.az.us>

FAA 5010 Data, Area Airports
<http://www.airnav.com>,
<http://www.gcr1.com>

Historical Air Cargo (Pounds) Williams Gateway Airport			
	1995		
	Enplaned (Outbound)	Deplaned (Inbound)	Total
January	25,000	0	25,000
February	279,000	0	279,000
March	520,000	0	520,000
April	376,000	0	376,000
May	1,092,138	345,123	1,437,261
June	434,329	364,668	798,997
July	18,500	0	18,500
August	48,500	0	48,500
September	81,000	0	81,000
October	1,392,000	0	1,392,000
November	3,015,000	0	3,015,000
December	1,802,000		1,802,000
Total	9,083,467	709,791	9,793,258
	1996		
January	331,000	1,000	332,000
February	15,000	0	15,000
March	0	0	0
April	0	0	0
May	2,000	0	2,000
June	0	0	0
July	0	0	0
August	0	1,300	1,300
September	0	900	900
October	0	0	0
November	0	0	0
December	15,400	0	15,400
Total	363,400	3,200	366,600
	1997		
January	56,997	0	56,997
February	279,015	0	279,015
March	6,220	0	6,220
April	400	0	400
May	0	1,500	1,500
June	26,039	401	26,440
July	21,403	0	21,403
August	1,457	0	1,457
September	684	16,186	16,870
October	33,790	0	33,790
November	11,286	0	11,286
December	19,562	1,130	20,692
Total	456,853	19,217	476,070
Source: Williams Gateway Airport Authority			

Historical Air Cargo (Pounds) (Continued)			
Williams Gateway Airport			
	1998		
	Enplaned (Outbound)	Deplaned (Inbound)	Total
January	4,000	0	4,000
February	0	0	0
March	0	0	0
April	90,708	0	90,708
May	0	0	0
June	36,478	0	36,478
July	594	0	594
August	4,246	0	4,246
September	4,000	0	4,000
October	300	0	300
November	48	54	102
December	1,700	763	2,463
Total	142,074	817	142,891
Source: Williams Gateway Airport Authority			

Monthly Aircraft Operations (1994 - 1998)
Williams Gateway Airport

	Itinerant				Local		
	Air Carrier	Air Taxi	General Aviation	Military	General Aviation	Military	Total
1994							
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	76	4,222	1,292	2,219	894	8,703
April	0	110	4,838	1,591	3,280	1,345	11,164
May	0	127	4,395	838	3,038	626	9,024
June	0	138	4,851	1,015	3,600	687	10,291
July	0	181	4,232	633	3,075	413	8,534
August	0	250	4,031	1,196	3,143	954	9,574
September	0	191	4,490	996	3,384	697	9,758
October	0	249	5,645	824	4,317	605	11,640
November	0	378	8,534	1,182	7,264	768	18,126
December	0	230	5,317	836	4,157	549	11,089
Total	0	1,930	50,555	10,403	37,477	7,538	107,903
1995							
January	0	170	5,947	1,235	4,361	642	12,355
February	0	286	6,106	1,664	4,464	1,016	13,536
March	0	459	8,754	2,474	6,883	1,840	20,410
April	0	458	8,171	1,378	6,289	874	17,170
May	0	724	7,390	1,275	5,377	681	15,447
June	0	543	7,063	1,748	5,397	1,082	15,833
July	0	422	6,009	914	4,516	544	12,405
August	0	396	6,174	2,017	4,351	1,300	14,238
September	0	212	6,406	1,572	5,071	864	14,125
October	0	322	9,913	1,535	8,376	917	21,063
November	185	325	9,653	1,064	6,958	731	18,916
December	111	196	9,787	1,534	6,655	1,042	19,325
Total	296	4,513	91,373	18,410	68,698	11,533	194,823
1996							
January	26	170	3,989	435	6,834	938	12,392
February	7	141	3,246	523	7,129	1,537	12,583
March	6	172	4,116	408	6,847	1,128	12,677
April	10	158	2,952	381	8,526	1,132	13,159
May	13	172	2,647	402	8,233	1,086	12,553
June	42	159	2,093	330	6,636	494	9,754
July	364	132	3,191	421	6,538	1,344	11,990
August	8	82	3,157	322	6,979	1,207	11,755
September	10	92	3,461	367	7,180	1,101	12,211
October	10	100	6,306	343	10,618	1,408	18,785
November	28	243	3,981	479	8,665	1,915	15,311
December	28	196	4,078	322	7,955	1,212	13,791
Total	552	1,817	43,217	4,733	92,140	14,502	156,961

Monthly Aircraft Operations (1994 - 1998) (Continued)
Williams Gateway Airport

	Itinerant				Local		
	Air Carrier	Air Taxi	General Aviation	Military	General Aviation	Military	Total
1997							
January	5	195	4,413	416	8,315	1,637	14,981
February	11	160	4,515	352	9,716	2,067	16,821
March	6	183	5,304	503	9,979	3,443	19,418
April	12	287	4,658	427	10,245	1,804	17,433
May	15	248	4,694	385	10,209	1,841	17,392
June	7	293	3,928	468	10,280	1,969	16,945
July	4	348	3,892	229	9,631	968	15,072
August	10	225	2,720	397	6,489	2,112	11,953
September	3	186	2,959	270	7,095	964	11,477
October	15	279	5,409	508	7,567	2,123	15,901
November	9	211	3,023	401	9,365	2,352	15,361
December	9	290	3,045	418	7,957	1,936	13,655
Total	106	2,905	48,560	4,774	106,848	23,216	186,409
1998							
January	93	257	3,449	426	10,062	2,737	17,024
February	12	210	2,927	351	8,085	1,720	13,305
March	15	231	3,522	454	9,057	2,886	16,165
April	40	245	3,175	375	10,327	1,868	16,030
May	22	272	3,510	368	10,132	1,712	16,016
June	99	353	3,522	543	9,736	2,537	16,790
July	107	355	3,581	439	9,444	1,392	15,318
August	85	324	3,616	411	9,404	1,283	15,123
September	72	311	4,005	460	9,672	1,561	16,081
October	81	339	7,058	482	10,887	1,653	20,500
November	112	320	4,401	432	11,117	1,343	17,725
December	79	274	4,125	328	9,759	1,160	15,725
Total	817	3,491	46,891	5,069	117,682	21,852	195,802

Source: Williams Gateway Airport Authority

Monthly Fuel Sales (1995-1998) Williams Gateway Airport			
	100LL	Jet-A	Total
1995			
January	9,284	386,225	395,509
February	8,379	186,884	195,263
March	16,787	122,436	139,223
April	8,825	102,820	111,645
May	3,840	530,257	534,097
June	7,342	80,958	88,300
July	7,019	25,764	32,783
August	5,497	13,596	19,093
September	7,569	20,165	27,734
October	23,924	11,321	35,245
November	26,943	6,508	33,451
December	0	0	0
Total Gallons	125,409	1,486,934	1,612,343
1996			
January	12,009	126,014	138,023
February	10,111	66,919	77,030
March	17,554	39,203	56,757
April	20,033	82,149	102,182
May	5,559	24,731	30,290
June	6,290	79,438	85,728
July	6,521	883,687	890,208
August	4,666	23,493	28,159
September	7,706	28,468	36,174
October	12,059	30,403	42,462
November	8,496	108,218	116,714
December	7,160	63,724	70,884
Total Gallons	118,164	1,556,447	1,674,611
1997			
January	7,991	28,161	36,152
February	9,496	68,658	78,154
March	11,209	112,540	123,749
April	9,566	42,234	51,800
May	8,251	41,211	49,462
June	9,923	32,570	42,493
July	6,175	16,512	22,687
August	5,213	69,995	75,208
September	6,368	66,658	73,026
October	13,882	101,099	114,981
November	7,562	86,425	93,987
December	7,783	65,771	73,554
Total Gallons	103,419	731,834	835,253

Monthly Fuel Sales (1995-1998) (Continued)
Williams Gateway Airport

	100LL	Jet-A	Total
1998			
January	8,575	89,682	98,257
February	9,396	37,036	46,432
March	13,283	78,668	91,951
April	10,491	113,668	124,159
May	10,145	50,897	61,042
June	10,045	105,483	115,528
July	8,749	81,980	90,729
August	9,416	94,472	103,888
September	13,960	93,614	107,574
October	17,957	111,788	129,745
November	13,731	100,603	114,334
December	12,618	71,064	83,682
Total Gallons	138,367	1,028,952	1,167,321